United States Department of Agriculture

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Natural Resources Conservation Service

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National Park Service

In cooperation with United States Department of the Interior, Bureau of Land Management; University of Idaho, College of Agriculture; and Idaho Soil Conservation Commission

Soil Survey of Craters of the Moon National Monument and Preserve, Idaho

How to Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

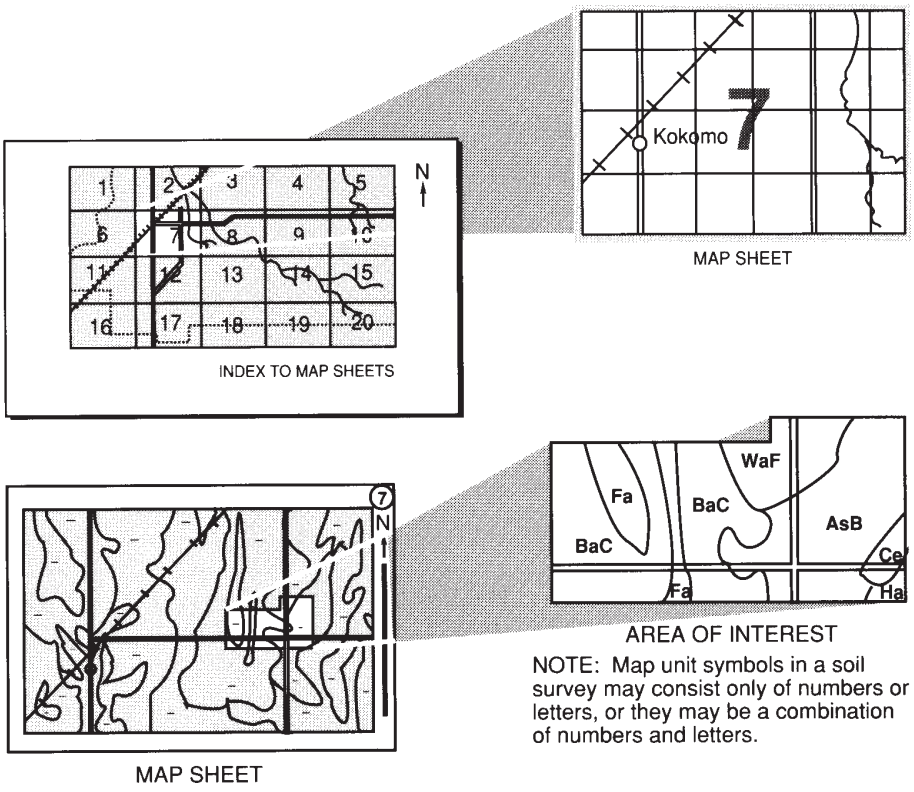
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and National Park Service and the Bureau of Land Management; University of Idaho, College of Agriculture; and Idaho Soil Conservation Commission. The survey is part of the technical assistance furnished to the Craters of the Moon National Monument and Preserve, Idaho.

See the section "How This Survey Was Made" for a discussion on the fieldwork for this survey. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2010. The most current official data are available on the Internet.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Citation

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Cover Caption

View looking southeast toward Big Cinder Butte cinder cone.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Issued 2010

Foreword

This soil survey was developed in conjunction with the National Park Service Inventory and Monitoring program and serves as the official source document for soils in the Craters of the Moon National Monument and Preserve, Idaho.

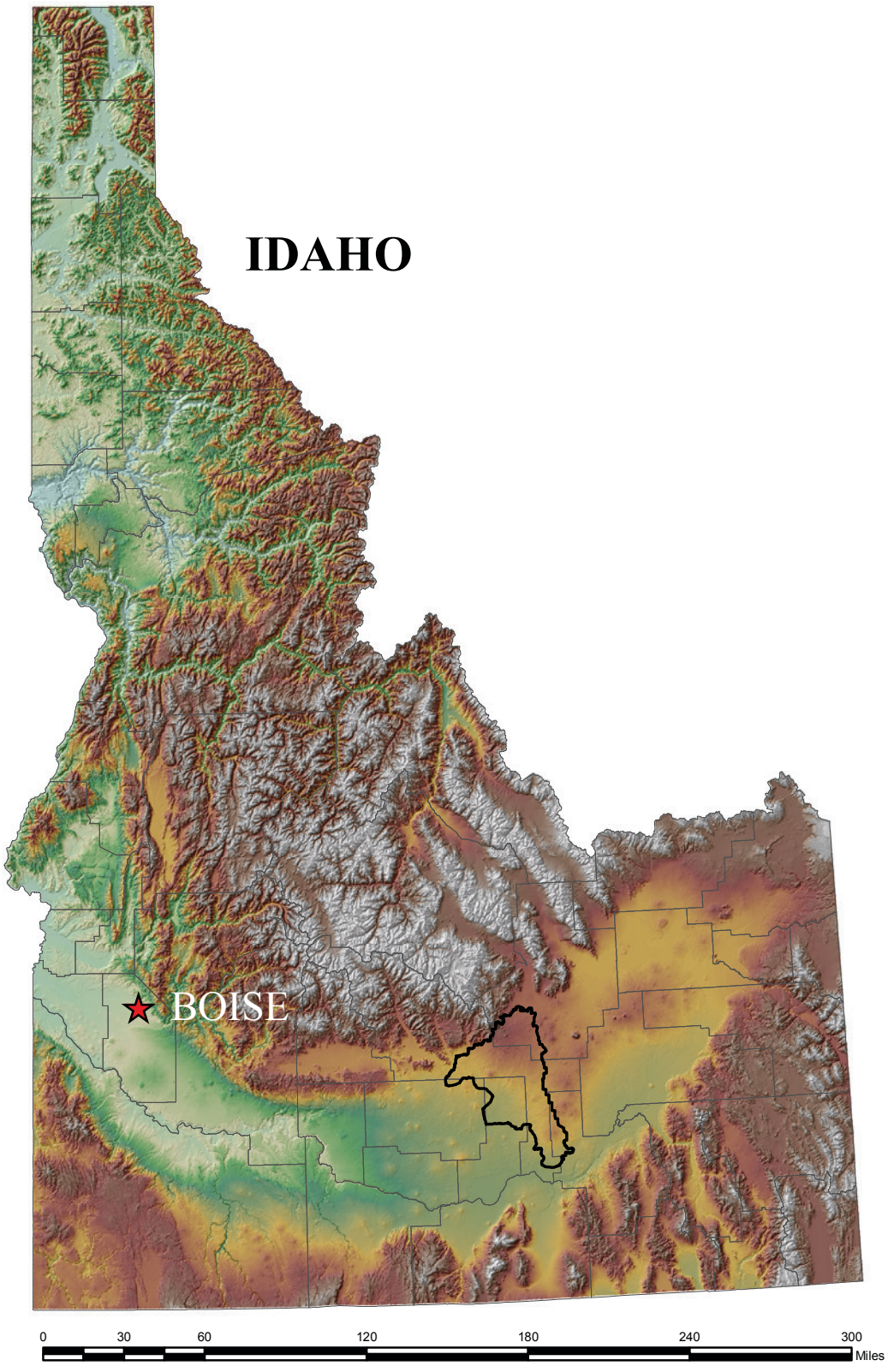
The soil survey contains information that affects current and future land use planning. It contains predictions of soil behavior for elected land uses. The survey highlights soil limitations, practices needed to overcome the limitations, and the impact of selected land uses on the environment. It is designed to meet the needs of the National Park Service and its partners in better understanding the various soil properties and their effect on various natural ecological properties in order to understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Craters of the Moon National Monument and Preserve.

Jeffery Burwell
State Conservationist
Natural Resources Conservation Service



Location of Craters of the Moon National Monument and Preserve in Idaho.

Soil Survey of Craters of the Moon National Monument and Preserve, Idaho

By Francis R. Kukachka, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, and United States Department of the Interior, National Park Service
in cooperation with
United States Department of the Interior, Bureau of Land Management; University of Idaho, College of Agriculture; and Idaho Soil Conservation Commission

General Nature of the Survey Area

This section provides general information about the survey area. It describes climate, history and development, and geology.

Climate

Prepared by the Natural Resources Conservation Service, National Water and Climate Center, Portland, Oregon.

The climate tables were created from data recorded at the Craters of the Moon National Monument and Preserve, Idaho, in the period 1971 to 2000. Thunderstorm days, relative humidity, percent sunshine, and wind information were estimated from data recorded at the First Order station at Pocatello, Idaho.

Table 1 gives data on temperature and precipitation for the survey area. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 21.5 degrees F and the average daily minimum temperature is 11.9 degrees. The lowest temperature on record, which occurred at the Craters of the Moon National Monument and Preserve on December 24, 1983, is -37 degrees. In summer, the average temperature is 65 degrees and the average daily maximum temperature is 81 degrees. The highest temperature, which occurred at the Craters of the Moon National Monument and Preserve on July 8, 1996, is 100 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is about 14.96 inches. Of this, about 3.55 inches, or 24 percent, usually falls in June through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record was 2.98 inches at the Craters of the Moon National Monument and Preserve on January 21, 1969. Thunderstorms occur on about 18 days each year, and most occur in June.

The average seasonal snowfall is 87.3 inches. The greatest snow depth at any one time on record was 96 inches recorded on February 25, 1969. On an average, 100 days per year have at least 1 inch of snow on the ground. The heaviest 1-day

snowfall on record was 23 inches recorded on January 19, 1969, and January 21, 1982.

The average relative humidity in midafternoon is about 53 percent. Humidity is higher at night, and the average at dawn is about 73 percent. The sun shines 80 percent of the time possible in summer and 44 percent in winter. The prevailing wind is from the west-southwest. Average windspeed is highest, 11.7 miles per hour, in April.

History and Development

The survey area is in the south-central part of Idaho. The total acreage is about 755,000 acres. The first reported exploration of the periphery of the area was led by Benjamin L.E. Bonneville, a trapper who extended the search for fur beyond the Snake River in 1833 to 1834 (Ostrogorsky, 1983). During the 1840's and 1850's, thousands of emigrants crossed the Snake River Plain on the Oregon Trail. By 1862, conflicts between the emigrants and Native Americans along the Snake River had intensified to the extent that emigrants left the Snake River at Fort Hall and took Goodale's Cutoff, which ran along the northern edge of the Snake River Plain and skirted the Craters of the Moon lava field. Part of Goodale's Cutoff passes through the northern end of the survey area. Diaries of the emigrants vividly describe the area. By 1904, pioneers referred to the area as Craters of the Moon.

Stearns reported that Arco resident J.W. Powell searched for livestock water supplies in the Craters of the Moon lava field in 1879 and again with Walter Ferris in the 1880's (Stearns, 1928). In 1901, I.C. Russell of the U.S. Geological Survey (USGS) led the first scientific exploration of the northern Craters of the Moon area. In 1921, Harold T. Stearns, also of the USGS, explored the area in greater detail and recommended that the area be established as a National monument (Stearns, 1924). Robert L. Limbert, a taxidermist and adventurer from Boise, Idaho, also explored the Craters of the Moon area in the early 1920's and named many of its geologic features. Limbert actively publicized the area and wrote numerous articles about the unique landscape. His article published in National Geographic early in 1924 was the final impetus needed for establishment of the monument.

On May 2, 1924, President Calvin Coolidge proclaimed that 101 square kilometers (24,958 acres) be established as Craters of the Moon National Monument. Stearns returned in 1926 to continue surveying the area. After the survey was completed, the monument was expanded to a total of 215 square kilometers (53,128 acres) (Ostrogorsky 1983).

In 1962, 21.65 square kilometers (5,350 acres) was added to protect the 0.73-square-kilometer (180 acres) Carey Kipuka for scientific study. In 1970, 175 square kilometers (43,243 acres) was designated as the Craters of the Moon Wilderness Area.

The monument was expanded again in November of 2000 by presidential proclamation. Approximately 1,659 square kilometers (409,948 acres) of Federal land encompassing the remainder of the Craters of the Moon lava field and the Wapi and King's Bowl lava fields were added to the monument. This addition was subsequently designated as the Craters of the Moon National Preserve. The proclamation in 2000 also established a National monument administered by the Bureau of Land Management of approximately 1,011 square kilometers (249,824 acres) of rangeland surrounding the lava fields.

Geology

An arc about 400 miles long, known as the Snake River Plain, cuts a swath 30 to 125 miles wide across southern Idaho. The official state highway map of Idaho, which depicts mountains with shades of green, shows this arc as white because of the relatively little vegetation as compared to the mountainous areas of the State.

Immense amounts of lava from within the earth have been deposited on the plain by volcanic activity dating back more than 12 million years. Some of the lava emerged from the earth as recently as about 2000 years ago, notably that of the Craters of the Moon National Monument and Preserve, which encompasses the three youngest lava fields on the plain. Some of the best examples of basaltic volcanism in the world are in the survey area. A regional understanding of the Snake River Plain is needed to understand the events that resulted in the Craters of the Moon area.

Basaltic and Rhyolitic Lava

The lava deposited on the Snake River Plain is mainly two types—basaltic and rhyolitic. Magma, molten rock material beneath the surface of the earth, issues from a vent or eruptive fissure onto the surface, sometimes forming a volcano. When this material is on the surface, it is called lava. The composition of this erupted material varies. Basaltic lava formed from magma that originated within the mantle. Rhyolitic lava originated from crustal material melted by the heat from basalt intruded into the earth's crust. To explain its history, geologists now divide the Snake River Plain into eastern and western units. Following is the geologic history of the eastern part of the Snake River Plain, on which the Craters of the Moon area lies.

On the eastern Snake River Plain, basaltic and rhyolitic lava formed in two different stages of volcanic activity. Younger basaltic lava mostly lies atop older rhyolitic lava. The eastern Snake River Plain runs from near Twin Falls northeast to the Yellowstone National Park area, on the Wyoming-Montana border. On the Idaho National Laboratory site, geologists drilled to a depth of nearly 2 miles. They drilled through about 0.5 mile of basaltic lava flows interbedded with sand, silt, and clay and then through more than 1.5 miles of rhyolitic lava below. The drilling extended to a total depth of 10,365 feet, probably into a magma chamber. This is the deepest drilling ever done in the area, so it is not known how much deeper the rhyolitic lava may extend.

In a continental setting, this combination of a thinner layer of younger basaltic lava over an older and thicker layer of rhyolitic lava is typical of volcanic activity that is believed to be associated with a mantle plume. The mantle plume theory was developed in the early 1970's as an explanation for the creation of the Hawaiian Islands. According to one version of the theory, uneven heating within the earth's core allows some material in the overlying mantle to become slightly hotter than the surrounding material. As the temperature of the material increases, the density decreases. Thus, it becomes relatively buoyant and rises through the cooler material, like a tennis ball released underwater, though certainly much more slowly. When this molten material reaches the crust, it melts and pushes up through the crust. If it has sufficient buoyancy, it may rise to the earth's surface and erupt onto the surface as molten lava.

The earth's crust is made up of numerous plates that float on the asthenosphere in the upper mantle. Over time, as the plates move over the hotspot or mantle plume, the presence of the heat source will be expressed at the earth's surface as a line of volcanic eruptions. The Snake River Plain records the movement of the North American plate—350 miles in 15 million years—over the mantle plume or hotspot now located beneath Yellowstone National Park and usually referred to as the Yellowstone Hotspot. The Hawaiian chain of islands marks a similar track.

Two Stages of Volcanism

As described above, volcanic eruptions associated with the hotspot occur as two types—rhyolitic and basaltic. The upwelling magma from the mantle collects in a chamber as it enters the earth's lower crust, and its heat begins to melt the surrounding crustal rock. Since this rock contains a large amount of silica, it forms a thick and pasty rhyolitic magma. The rhyolitic magma is lighter than the overlying

crustal rock; therefore, it begins to rise and eventually forms a second magma chamber very close to the earth's surface. As more and more of this gas-charged rhyolitic magma collects in the upper crustal chamber, it domes the land surface. When the annular fractures that form around the dome intersect the chamber, the pent-up pressure is violently and rapidly released.

Explosive Rhyolitic Volcanism

Rhyolitic explosions tend to be devastating. When the gas-charged molten material reaches the surface of the earth, the gas expands rapidly, perhaps as much as 25 to 75 times by volume. The reaction is similar to the bubbles that form in a bottle of soda water that has been shaken. Shake the container and the pressure-bottled liquid will retain its volume as long as the cap is tightly sealed. Release the pressure by removing the bottle cap, however, and the soft drink will spray all over the room and occupy a volume of space far larger than the bottle from which it issued. This initial vast spray is followed by a foaming action as the less gas-charged liquid bubbles out of the bottle.

A single rhyolitic explosion, such as the one that resulted in the Huckleberry Ridge Tuff on the Snake River Plain, can eject hundreds of cubic miles of material into the atmosphere and onto the earth's surface. This tuff was 600 cubic miles in volume. In contrast, the eruption of Mount St. Helens in 1980, which devastated 150 square miles of forest, produced less than 0.25 cubic mile of ejected material. So much material was ejected in the massive rhyolitic explosions on the Snake River Plain that the earth's surface collapsed to form huge depressions known as calderas. Most of the evidence of these gigantic explosive volcanoes in the Snake River Plain has been covered by subsequent flows of basaltic lava. Traces of rhyolitic eruptions, however, are along the margins of the plain and in the Yellowstone National Park area.

Outpourings of Basaltic Lava

As the earth's crust passes over and then moves beyond a hotspot, the explosive volcanism of the rhyolitic stage ceases. However, the heat contained in the earth's upper mantle and crust remains and continues to produce upwelling magma. This upwelling magma is basaltic, contains less silica than rhyolite, and is very fluid.

The basalt, similarly to the rhyolite, collects in magma chambers within the crust until pressure builds up enough to force it to the surface or pressure is released causing decompression melting. The eastern Snake River Plain and its associated mountain ranges are at the northern end of the Basin and Range Province and are still undergoing stretching, know as crustal extension. This crustal extension has produced decompression melting and attendant pockets of volcanism throughout the province. Because of all of the hot material left behind by the Yellowstone Hotspot, the amount of decompression melting and volume of basaltic material erupted onto the surface of the eastern Snake River Plain has been extensive. An estimated 8,000 basaltic events have taken place on the eastern Snake River Plain, with a typical eruptive volume of 1.2 cubic miles.

Upon reaching the surface, the gases contained within the lava commonly easily escaped and produced mild eruptions. Instead of exploding into the air like the earlier rhyolitic activity, the more fluid basaltic lava flooded out onto the surrounding landscape, forming the gently arched shield volcanoes typical of the eastern Snake River Plain. These flows were fairly extensive and commonly covered many square miles. After millions of years, most of the older rhyolitic deposits have been covered by these basaltic lava flows.

The Great Rift and Craters of the Moon Lava Field

The survey area lies along a volcanic rift zone. Rift zones occur in areas where the earth's crust is being pulled in opposite directions. Geologists believe that the

interaction of the earth's crustal plates in the vicinity of the Snake River Plain have stretched, thinned, and weakened the earth's crust so that cracks have formed both on and below the surface. Magma under pressure can follow these cracks and fissures to the surface. While many volcanic rift zones are throughout the Snake River Plain, the most extensive is the Great Rift that runs through the survey area. The Great Rift is approximately 50 miles long, and it ranges from 1.5 to 5.0 miles wide. It is marked by both eruptive and non-eruptive fissures and the alignment of more than 25 volcanic cinder cones in the Craters of the Moon lava field. Between the Craters of the Moon lava field and the Kings Bowl lava field, it is marked by open-crack rift sets and extends at least as far as the vent area of the Wapi lava field. The Great Rift is the site of origin for the more than 60 different lava flows that make up the Craters of the Moon lava field.

Eight Major Eruptive Periods

Most of the lava exposed in the Craters of the Moon lava field formed between 2,000 and 15,000 years ago. The eight eruptive periods each lasted less than 1,000 years and were separated by periods of relative calm that lasted for a few hundred to more than 2,000 years. These sequences of eruptions and calm periods are caused by the alternating buildup and release of magmatic pressure inside the earth. Once an eruption releases the pressure, time is required for it to build up again.

Eruptions have been dated by several methods—tree rings, paleomagnetic dating, radiocarbon (C-14) dating, and Argon 40/39 dating. Tree rings were the first indicators used to determine the age of the flows. Prior to counting growth rings, it had been assumed that many of the flows were just a couple hundred years old because of their fresh appearance. Growth rings, however, showed that they were well over a thousand years old. Paleomagnetic dating compares the alignment of magnetic minerals in the flows with past orientations of the earth's magnetic field. If the azimuth and plunge of magnetic north, recorded in a lava flow for which there is no C-14 date, is similar to the azimuth and plunge of magnetic north recorded in a lava flow for which there is a C-14 date, then the C-14 date can be extrapolated for the other flow. Radiocarbon dating makes use of radioactive carbon-14 in charcoal created from vegetation that is overrun by lava flows. Dates obtained by C-14 and paleomagnetic methods are considered to be accurate to within about 100 years. Argon 40/39 dating considers the ratio of these two isotopes of argon to determine the age of the rock and is used to date the older lava flows.

Typical Eruption in Craters of the Moon Area

Research at the monument and observations of similar eruptions in Hawaii and Iceland suggest the following scenario for a typical eruption in Craters of the Moon area. Various forces combine to cause a section of the Great Rift to pull apart. When the forces that tend to pull the earth's crust apart are combined with the forces created as magma accumulates, the crust becomes weakened and cracks form. As the magma rises buoyantly within these cracks, the pressure exerted on it is further reduced and the gases within the magma begin to expand. As gas continues to expand, the magma becomes frothy.

At first the lava is very fluid and charged with gas. Eruptions begin as a long line of fountains that are a few hundred feet or less in height and as much as a mile in length. This "curtain of fire eruption" mainly produces cinders and frothy, fluid lava. After hours or days, the expansion of gases decreases and eruptions become less violent. Segments of the fissure seal off, and eruptions become smaller and more localized. However, as the eruption centers to one or a few vents, a nozzle effect can be produced and the molten material can be ejected or shot to a height of more than 1,000 feet. As the material accumulates into huge piles, it forms cinder cones.

With further reductions in the content of gas in the magma, the volcanic activity again changes. Huge outpourings of lava are pumped out of the various fissures or

vents of cinder cones and form lava flows. Lava flows may continue for as little as a few hours to as long as months or possibly a few years. Long-term lava flows from a single vent become the source of most of the material produced during a sustained eruption. As gas pressure falls and magma is depleted, flows subside. Finally, all activity stops.

When Will the Next Eruption Occur?

Craters of the Moon is not an extinct volcanic area. It is merely in a dormant stage of its eruptive sequence. By dating the lava flows, geologists have shown that the volcanic activity along the Great Rift has been persistent over the last 15,000 years, occurring approximately every 2,000 years. Because the last eruptions took place about 2,000 years ago, geologists believe that eruptions are likely within the next 1,000 years.

How This Survey Was Made

The soil survey of Craters of the Moon National Monument and Preserve has had several administrative boundary changes since 1924. Until 2000, the survey area was known as Craters of the Moon Monument and consisted of approximately 53,000 acres. This original area was mapped by Rulon Winward of the Natural Resources Conservation Service in 1998. In 2000, the survey area was expanded to include approximately 701,000 acres that had been mapped by the Soil Conservation Service (now known as the Natural Resources Conservation Service) prior to the mapping in 1998 and the name of the survey area was changed to Craters of the Moon National Monument and Preserve. A detailed history of the administrative boundary changes is in the section “History and Development.” This prior mapping is contained in several soil survey reports, including Blaine County Area, Idaho, published in 1991; Butte County Area, Idaho, Parts of Butte and Bingham Counties, published in 2009; Minidoka County Area, Idaho, Parts of Minidoka, Blaine, and Lincoln Counties, published in 2004; Power County Area, Idaho, published in 1981; and Wood River Area, Idaho, Gooding County and Parts of Blaine, Lincoln, and Minidoka Counties, published in 2005. The National Park Service requested that all land within the boundary of the Craters of the Moon National Monument and Preserve be included in one soil survey report; therefore, the National Park Service land area contained in these previously mapped areas is now included in this report and the mapping and soil information on the land in the previously published reports is superseded by the soil information in this report. The soil lines and map unit names changed very little from those in the original surveys, but the map unit symbols were changed to reflect a numeric sequence of the map units when sorted alphabetically by the first soil in the map unit name. The information on the soil properties and interpretations were reviewed and revised to reflect present soil survey standards. The soil names and descriptions for this survey were approved in 2006.

This survey was made in conjunction with the National Park Service inventory and monitoring program to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of

the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on range production and characteristic vegetation were determined through onsite investigation. The vegetative information was reviewed and correlated to an ecological site. The ecological site information was then correlated to a soil component.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately. Digital color aerial imagery was used as the base map for placement of soil lines for this soil survey.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Lava Flows and Soils that Formed in Volcanic Ash, Cinders, Alluvium, and Eolian Deposits on Lava Fields and Lava Plains

Number of map units: 3
Percentage of survey area: 61 percent

1. Lava flows

Lava flows is a miscellaneous area consisting of relatively recent flows (fig. 1). The lava is dominantly two types—a'a' and pahoehoe. The a'a' lava is very rough and is extremely difficult to traverse, and the pahoehoe lava is relatively smooth and easier to traverse. Lava flows support little or no vegetation.

Percentage of survey area: 34 percent
Major component: Lava flows on lava fields
Elevation: 4,200 to 6,100 feet
Frost-free period: 60 to 90 days
Mean annual precipitation: 11 to 18 inches
Minor components: Cinderhurst soils that are very shallow to bedrock and on lava fields, Huddle soils that are deep to bedrock and on kipukas of lava plains, and Moonville soils that are very deep and on kipukas of lava plains
Major uses: Scenic viewing
Limitation for use: Very little or no soil material

Figure 1.—Area of general soil map units 1, 2, and 4, looking southwest.

2. Lava flows-Cinderhurst

Lava flows and well drained, very shallow soils that formed in volcanic ash, cinders, and eolian deposits on slopes of 2 to 15 percent

Percentage of survey area: 26 percent
Major components: Lava flows and Cinderhurst soils that are very shallow to bedrock on lava fields with slopes of 2 to 15 percent (fig. 1)
Elevation: 4,800 to 6,100 feet
Frost-free period: 60 to 90 days
Mean annual precipitation: 12 to 16 inches
Minor components: None
Major use: Scenic viewing
Limitations for use: Areas of Lava flows that have very little or no soil material and very shallow depth to bedrock of the Cinderhurst soils

3. Starbuck-Lava flows

Lava flows and well drained, shallow soils that formed in alluvium and eolian deposits on slopes of 1 to 20 percent

Percentage of survey area: 1 percent
Major components: Lava flows on lava fields and Starbuck soils that are shallow to bedrock on lava plains with slopes of 1 to 20 percent
Elevation: 3,400 to 4,700 feet
Frost-free period: 90 to 120 days
Mean annual precipitation: 8 to 12 inches
Minor components: Very deep Kecko soils and Vining soils that are moderately deep to bedrock on lava plains
Major uses: Rangeland and wildlife habitat
Limitations for use: Shallow depth to bedrock of the Starbuck soils and areas of Lava flows that have very little or no soil material

Soils that Formed in Volcanic Ash, Cinders, and Eolian Deposits on Volcanic Cones, Mountain Slopes, and Lava Plains

Number of map units: 1
Percentage of survey area: 2 percent

4. Infernocone-Huddle-Lavacreek

Well drained, moderately deep and deep soils that formed in volcanic ash, cinders, and eolian deposits on slopes of 2 to 60 percent

Percentage of survey area: 2 percent
Major components: Infernocone soils that are moderately deep to cinders and are on volcanic cones with slopes of 2 to 40 percent, Huddle soils that are deep to bedrock and are on lava plains with slopes of 2 to 12 percent, and Lavacreek soils that are deep to bedrock and are on mountain slopes with slopes of 15 to 60 percent (fig. 1)
Elevation: 4,600 to 9,300 feet
Frost-free period: 30 to 110 days
Mean annual precipitation: 12 to 24 inches
Minor components: Very deep Moonville soils on hillslopes and lava plains with slopes of 2 to 60 percent, Echocrater soils that are moderately deep to cinders and are on volcanic cones with slopes of 20 to 40 percent, and Bigcinder soils that are shallow to cinders and are on volcanic cones with slopes of 2 to 50 percent
Major uses: Scenic viewing and wildlife habitat
Limitations for use: Slope and depth to cinders

Soils that Formed in Alluvium, Loess, and Eolian Deposits on Lava Plains and Buttes

Number of map units: 6
Percentage of survey area: 36 percent

5. McPan-Starbuck-Chijer

Well drained, shallow, moderately deep, and very deep soils that formed in alluvium, loess, and eolian deposits on slopes of 1 to 20 percent

Percentage of survey area: 9 percent
Major components: McPan soils that are moderately deep to a duripan and are on lava plains and buttes with slopes of 1 to 10 percent, Starbuck soils that are shallow to bedrock and are on lava plains with slopes of 1 to 20 percent, and very deep Chijer soils on buttes with slopes of 1 to 4 percent
Elevation: 3,400 to 4,700 feet
Frost-free period: 90 to 120 days
Mean annual precipitation: 8 to 12 inches
Minor components: Taunton soils that are moderately deep to a duripan and are on buttes with slopes of 2 to 15 percent and very deep Paulville soils on buttes with slopes of 1 to 6 percent
Major uses: Rangeland and wildlife habitat
Limitations for use: Depth to a duripan and to bedrock

6. McCarey-Beartrap-Pedleford

Well drained, moderately deep and deep soils that formed in alluvium, loess, and eolian deposits on slopes of 0 to 30 percent

Percentage of survey area: 11 percent
Major components: McCarey soils that are moderately deep to bedrock and are on lava plains and buttes with slopes of 0 to 30 percent, Beartrap soils that are deep to bedrock and are on lava plains with slopes of 2 to 20 percent, and Pedleford soils that are moderately deep to bedrock and are on buttes with slopes of 2 to 30 percent
Elevation: 4,680 to 5,440 feet
Frost-free period: 70 to 110 days
Mean annual precipitation: 10 to 16 inches
Minor components: Very deep Molyneux soils on lava plains with slopes of 2 to 8 percent and Rock outcrop
Major uses: Rangeland and wildlife habitat
Limitations for use: Depth to bedrock, slope, Rock outcrop, low available water capacity, and hazard of water erosion

7. Deerhorn-Rehfield-Wildors

Well drained, moderately deep and deep soils that formed in alluvium and eolian deposits on slopes of 1 to 15 percent

Percentage of survey area: 12 percent
Major components: Deerhorn soils that are moderately deep to a duripan and are on buttes with slopes of 2 to 15 percent, Rehfield soils that are deep to a sandy substratum and are on lava plains with slopes of 1 to 8 percent, and Wildors soils that are moderately deep to a duripan and are on buttes with slopes of 2 to 15 percent
Elevation: 4,300 to 5,000 feet
Frost-free period: 85 to 120 days
Mean annual precipitation: 8 to 13 inches
Minor components: Pagari soils that are deep to bedrock and are on lava plains with slopes of 2 to 15 percent, Rekima soils that are shallow to a duripan and are on buttes with slopes of 2 to 15 percent, and Rock outcrop
Major uses: Rangeland and wildlife habitat
Limitations for use: Depth to a duripan, slope, Rock outcrop, low available water capacity, and hazard of water erosion

8. McBiggam-Bancroft

Well drained, very deep soils that formed in alluvium and loess on slopes of 1 to 8 percent

Percentage of survey area: 1 percent
Major components: Very deep McBiggam soils on lava plains with slopes of 2 to 8 percent and very deep Bancroft soils on lava plains with slopes of 1 to 8 percent
Elevation: 4,800 to 5,600 feet
Frost-free period: 65 to 90 days
Mean annual precipitation: 12 to 16 inches

Minor components: McCarey soils that are moderately deep to bedrock and are on lava plains with slopes of 0 to 30 percent and very deep Molyneux soils on lava plains with slopes of 2 to 8 percent
Major uses: Rangeland and wildlife habitat
Limitation for use: Hazard of water erosion

9. Rock outcrop-Trevino-Portino

Rock outcrop and well drained, shallow and moderately deep soils that formed in alluvium and loess on slopes of 0 to 20 percent

Percentage of survey area: 2 percent
Major components: Rock outcrop, Trevino soils that are shallow to bedrock and are on lava plains with slopes of 0 to 20 percent, and Portino soils that are moderately deep to bedrock and are on lava plains with slopes of 0 to 20 percent
Elevation: 4,200 to 5,150 feet
Frost-free period: 100 to 140 days
Mean annual precipitation: 8 to 11 inches
Minor components: Portneuf soils that are very deep and deep to bedrock and are on lava plains with slopes of 0 to 8 percent, Vining soils that are moderately deep to bedrock and are on lava plains with slopes of 0 to 12 percent, and very deep Kecko soils on lava plains with slopes of 2 to 8 percent
Major uses: Rangeland and wildlife habitat
Limitations for use: Rock outcrop, depth to bedrock, and surface stones

10. Techicknot-Nargon-Atom

Well drained, moderately deep and very deep soils that formed in alluvium on slopes of 0 to 20 percent

Percentage of survey area: 1 percent
Major components: Very deep Techicknot soils on lava plains with slopes of 0 to 12 percent, Nargon soils that are moderately deep to bedrock and are on lava plains with slopes of 2 to 20 percent, and very deep Atom soils on lava plains with slopes of 2 to 20 percent
Elevation: 4,500 to 5,800 feet
Frost-free period: 70 to 100 days
Mean annual precipitation: 9 to 12 inches
Minor components: Goodington soils that are deep to bedrock and are on lava plains with slopes of 2 to 4 percent, Manard soils that are moderately deep to a duripan and are on lava plains with slopes of 2 to 8 percent, and Techick soils that are deep to sand and gravel and are on fan remnants with slopes of 0 to 4 percent
Major uses: Rangeland and wildlife habitat
Limitations for use: Depth to bedrock, moderate sodium content in the Atom soil, and hazard of water erosion

Soils that Formed in Alluvium and Colluvium on Mountain Slopes, Hillslopes, and Fan Remnants

Number of map units: 1
Percentage of survey area: 1 percent

11. Vitale-Blackspar-Drage

Well drained, shallow, moderately deep, and very deep soils that formed in alluvium and colluvium on slopes of 0 to 75 percent

Percentage of survey area: 1 percent
Major components: Vitale soils that are moderately deep to bedrock and are on mountain slopes with slopes of 30 to 60 percent, Blackspar soils that are shallow to bedrock and are on mountain slopes with slopes of 30 to 75 percent, and very deep Drage soils on fan remnants and hillslopes with slopes of 0 to 20 percent
Elevation: 4,800 to 8,500 feet
Frost-free period: 50 to 90 days
Mean annual precipitation: 12 to 20 inches
Minor components: Rock outcrop on mountain slopes and hillslopes and Povey soils that are deep to bedrock and are on mountain slopes with slopes of 30 to 60 percent
Major uses: Rangeland and wildlife habitat
Limitations for use: Depth to bedrock, slope, hazard of water erosion, and Rock outcrop

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For

example, Bigcinder ashy sandy loam, 20 to 50 percent slopes, is a phase of the Bigcinder series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes and associations.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. McCarey-Beartrap complex, 1 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Cinder land-Northcrater association, 2 to 50 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Lava flows is an example.

Each detailed soil map unit is assigned to a major land resource area (MLRA) (USDA, 2006). The MLRA for each detailed soil map unit is given in this section. Some map units, such as Rock outcrop, Water, and other miscellaneous areas, may not be assigned to a single MLRA because the unit can occur in any MLRA.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

1—Bancroft silt loam, 1 to 4 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 5,200 feet (1,463 to 1,585 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 65 to 90 days

Map Unit Composition

Bancroft and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Bancroft

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 4 percent
Parent material: Silty alluvium and/or loess
Vegetation: Idaho fescue, threetip sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 12 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTR4/FEID (R010AY023ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-silty, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 6 inches; silt loam
AB—6 to 12 inches; silt loam
Bt1—12 to 15 inches; silt loam
Bt2—15 to 26 inches; silty clay loam
Bk1—26 to 48 inches; silty clay loam
Bk2—48 to 60 inches; silt loam

Minor Components

Goodington soils
Percentage of map unit: 5 percent
Landform: Lava plains

McCarey soils
Percentage of map unit: 5 percent
Landform: Lava plains

2—Bancroft silt loam, 4 to 8 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 5,200 feet (1,463 to 1,585 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 65 to 90 days

Map Unit Composition

Bancroft and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Bancroft

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Silty alluvium and/or loess
Vegetation: Idaho fescue, threetip sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 15 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very high (about 12.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTR4/FEID (R010AY023ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-silty, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; silt loam
Bt—11 to 40 inches; silty clay loam
2Bk—40 to 80 inches; gravelly loam

Minor Components

Goodington soils
Percentage of map unit: 5 percent
Landform: Lava plains

McCarey soils
Percentage of map unit: 3 percent
Landform: Lava plains

Manard soils
Percentage of map unit: 2 percent
Landform: Lava plains

3—Bigcinder ashy sandy loam, 20 to 50 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,400 to 6,490 feet (1,646 to 1,978 meters)
Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 37 to 43 degrees F (3 to 6 degrees C)
Frost-free period: 50 to 70 days

Map Unit Composition

Bigcinder and similar soils: 95 percent
Dissimilar minor component: 5 percent

Characteristics of Bigcinder

Setting
Landform: Volcanic cones
Down-slope shape: Linear

Across-slope shape: Linear
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 20 to 50 percent
Parent material: Volcanic ash and/or cinders derived from volcanic rock
Vegetation: Antelope bitterbrush, limber pine, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 18 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 2)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: Cinder North 12-16 PIFL2/PUTR2 (R010AY043ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal over fragmental or cindery, aniso, glassy Humic Xeric Vitricryands

Typical profile
A1—0 to 2 inches; ashy sandy loam
A2—2 to 6 inches; very gravelly ashy sandy loam
A3—6 to 10 inches; very gravelly ashy sandy loam
2C—10 to 20 inches; cinders
3A1—20 to 24 inches; very gravelly ashy loamy sand
3A2—24 to 30 inches; very gravelly ashy loamy sand
4C—30 to 60 inches; cinders

Minor Component

Cinder land
Percentage of map unit: 5 percent
Landform: Volcanic cones

3A—Bigcinder ashy sandy loam, 2 to 20 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,720 to 6,070 feet (1,743 to 1,851 meters)
Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 37 to 43 degrees F (3 to 6 degrees C)
Frost-free period: 50 to 70 days

Map Unit Composition

Bigcinder and similar soils: 90 percent
Dissimilar minor component: 10 percent

Characteristics of Bigcinder

Setting
Landform: Volcanic cones
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 2 to 20 percent
Parent material: Volcanic ash and/or cinders derived from volcanic rock
Vegetation: Antelope bitterbrush, limber pine, mountain big sagebrush (fig. 2)

Properties and qualities
Depth to restrictive feature: 10 to 18 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 2)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.5 inches)

Figure 2.—Typical vegetation in an area of Bigcinder ashy sandy loam, 2 to 20 percent slopes, on a northeast-facing slope. The ecological site is Cinder 12-16 PIFL2/ARTRV (R010AY044ID).

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: Cinder 12-16 PIFL2/ARTRV (R010AY044ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal over fragmental or cindery, aniso, glassy Humic Xeric Vitricryands

Typical profile
A1—0 to 2 inches; ashy sandy loam
A2—2 to 6 inches; very gravelly ashy sandy loam
A3—6 to 10 inches; very gravelly ashy sandy loam
2C—10 to 20 inches; cinders
3A1—20 to 24 inches; very gravelly ashy loamy sand
3A2—24 to 30 inches; very gravelly ashy loamy sand
4C—30 to 60 inches; cinders

Minor Component

Cinder land
Percentage of map unit: 10 percent
Landform: Volcanic cones

4—Blackspar-Rock outcrop complex, 45 to 75 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,200 to 8,500 feet (1,585 to 2,591 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Blackspar and similar soils: 50 percent
Rock outcrop: 30 percent
Dissimilar minor components: 20 percent

Characteristics of Blackspar

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): East
Aspect (range): North to southeast (clockwise)
Slope range: 45 to 75 percent
Parent material: Colluvium over siltstone, sandstone, and/or conglomerate
Vegetation: Low sagebrush, Sandberg bluegrass, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)

Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.9 inch)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Lithic Mollic Haploxeralfs

Typical profile
A—0 to 7 inches; very cobbly loam
Bt—7 to 17 inches; extremely cobbly loam
R—17 to 27 inches; unweathered bedrock

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

Vitale soils
Percentage of map unit: 10 percent
Landform: Mountain slopes

Dollarhide soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Lavacreek soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

5—Bringmee-Hutton complex, 1 to 4 percent slopes

Landscape: Valleys
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,000 feet (1,463 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Bringmee and similar soils: 50 percent
Hutton and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of Bringmee

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 4 percent
Parent material: Mixed alluvium
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Pachic Ultic Argixerolls

Typical profile
A—0 to 15 inches; loam
Bt1—15 to 34 inches; clay loam
Bt2—34 to 47 inches; sandy clay loam
2C—47 to 61 inches; gravelly sandy loam

Characteristics of Hutton

Setting
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 2 percent
Parent material: Volcanic ash and/or mixed alluvium
Vegetation: Sedge, slender wheatgrass, tufted hairgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Not saline

Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Natural drainage class: Poorly drained
Flooding frequency: Frequent (see Water Features table)
Ponding frequency: None
Depth to seasonal high water table: About 12 to 30 inches (see Water Features table)
Available water capacity (entire profile): Moderate (about 8.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4w
Ecological site: WET MEADOW CAREX-JUNCUS (R010AY039ID)
Hydric soil status: Hydric
Hydrologic soil group: D
Taxonomic classification: Fine, smectitic, frigid Cumulic Vertic Endoaquolls

Typical profile
A—0 to 4 inches; clay loam
Bg—4 to 19 inches; clay loam
Cg—19 to 62 inches; clay

Minor Components

Bruneel soils
Percentage of map unit: 10 percent
Landform: Flood plains

Marshdale soils
Percentage of map unit: 10 percent
Landform: Flood plains

Note: More information about the Bruneel and Marshdale soils is in the soil survey of Blaine County Area, Idaho.

6—Carey Lake loam, 0 to 2 percent slopes

Landscape: Valleys
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,700 to 6,000 feet (1,433 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

Carey Lake and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Carey Lake

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 2 percent
Parent material: Mixed alluvium
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3c
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Pachic Argixerolls

Typical profile
A—0 to 12 inches; loam
Bt—12 to 20 inches; clay loam
BC—20 to 47 inches; fine sandy loam
2C—47 to 72 inches; loam

Minor Components

Bringmee soils
Percentage of map unit: 5 percent
Landform: Fan remnants

Hutton soils
Percentage of map unit: 5 percent
Landform: Flood plains

7—Cinder land-Northcrater association, 2 to 50 percent slopes

Landscape: Lava plains (fig. 3)
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,510 feet (1,463 to 1,985 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 48 degrees F (4 to 9 degrees C)
Frost-free period: 70 to 110 days

Map Unit Composition

Cinder land: 50 percent
Northcrater and similar soils: 45 percent
Dissimilar minor component: 5 percent

Characteristics of Cinder Land

Description of areas: Broad areas of cinders almost entirely devoid of vegetation
Slope range: 20 to 50 percent

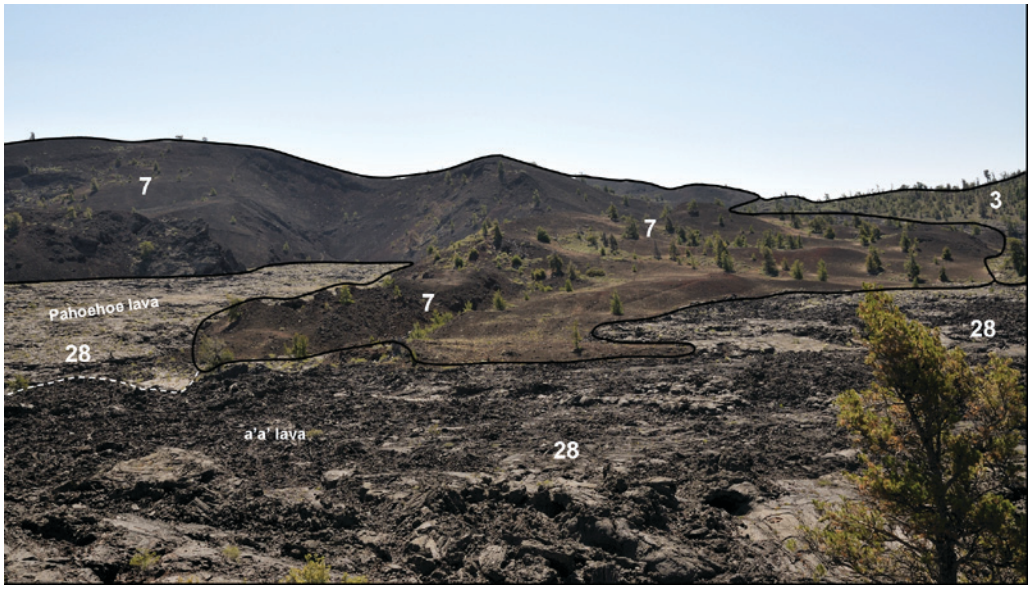


Figure 3.—Soil-landscape relationship in the area of North Crater Cone. View looking to the south. Numbers indicate detailed soil map units.

Characteristics of Northcrater

Setting
Landform: Volcanic cones (fig. 4)
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to southeast (clockwise)
Slope range: 2 to 25 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Cushion buckwheat (fig. 5), bitter root, phacelia, tapertip onion

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Somewhat excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: Cinder Garden 12-16 EROVD-LERE7 (R010AY046ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal, glassy, nonacid, frigid Vitrandic Xerorthents

Figure 4.—Soil-landscape relationship of Northcrater soil in an area of Cinder land-Northcrater association, 2 to 50 percent slopes, and Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes. Widely spaced cushion buckwheat is on the Northcrater soil.

Figure 5.—Cushion buckwheat on the Northcrater soil. The ecological site is Cinder Garden 12-16 EROVD-LEVE7 (R010AY046ID).

Typical profile
A1—0 to 4 inches; very gravelly ashy loamy sand
A2—4 to 8 inches; very gravelly ashy loamy sand
C1—8 to 12 inches; extremely gravelly ashy loamy sand
C2—12 to 20 inches; very gravelly ashy loamy sand
C3—20 to 30 inches; very gravelly ashy loamy sand
C4—30 to 60 inches; very gravelly ashy loamy sand

Minor Component

Rock outcrop
Percentage of map unit: 5 percent
Landform: Volcanic cones

8—Cox-Rehfield-Rock outcrop complex, 2 to 15 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,300 to 4,700 feet (1,311 to 1,433 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 85 to 120 days

Map Unit Composition

Cox and similar soils: 35 percent
Rehfield and similar soils: 30 percent
Rock outcrop: 20 percent
Dissimilar minor components: 15 percent

Characteristics of Cox

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits over volcanic rock
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.9 inch)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Lithic Ultic Haploxerolls

Typical profile
A—0 to 3 inches; very stony sandy loam
Bw—3 to 12 inches; very cobbly fine sandy loam
2R—12 to 22 inches; unweathered bedrock

Characteristics of Rehfield

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 6 percent
Parent material: Mixed alluvium and/or eolian deposits
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Ultic Argixerolls

Typical profile
A—0 to 11 inches; sandy loam
Bt1—11 to 23 inches; sandy loam
Bt2—23 to 42 inches; sandy clay loam
2C—42 to 67 inches; loamy sand

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

Rehfield soils, moderately deep
Percentage of map unit: 10 percent
Landform: Lava plains

Pagari soils
Percentage of map unit: 5 percent
Landform: Lava plains

9—Deerhorn-Rehfield-Rock outcrop complex, 2 to 15 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,500 to 4,700 feet (1,372 to 1,433 meters)
Mean annual precipitation: 9 to 13 inches (229 to 330 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 85 to 110 days

Map Unit Composition

Deerhorn and similar soils: 40 percent
Rehfield and similar soils: 30 percent
Rock outcrop: 20 percent
Dissimilar minor component: 10 percent

Characteristics of Deerhorn

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive features: 20 to 30 inches to an indurated duripan and 22 to 35 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Argiduridic Durixerolls

Typical profile
A—0 to 9 inches; fine sandy loam
Bt—9 to 17 inches; sandy clay loam
Bk—17 to 21 inches; loam
2Bkqm—21 to 24 inches; cemented material
3R—24 to 34 inches; unweathered bedrock

Characteristics of Rehfield

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 6 percent
Parent material: Mixed alluvium and/or eolian deposits
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Ultic Argixerolls

Typical profile
A—0 to 11 inches; sandy loam
Bt1—11 to 23 inches; sandy loam
Bt2—23 to 42 inches; sandy clay loam
2C—42 to 67 inches; loamy sand

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Component

Wildors soils
Percentage of map unit: 10 percent
Landform: Buttes

10—Deerhorn-Wildors complex, 2 to 8 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,600 to 5,000 feet (1,402 to 1,524 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 100 to 120 days

Map Unit Composition

Deerhorn and similar soils: 45 percent
Wildors and similar soils: 30 percent
Dissimilar minor components: 25 percent

Characteristics of Deerhorn

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive features: 20 to 30 inches to an indurated duripan and 22 to 35 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Argiduridic Durixerolls

Typical profile
A—0 to 9 inches; fine sandy loam
Bt—9 to 17 inches; sandy clay loam
Bk—17 to 21 inches; loam
2Bkqm—21 to 24 inches; cemented material
3R—24 to 34 inches; unweathered bedrock

Characteristics of Wildors

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Eolian deposits over a duripan over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive features: 21 to 28 inches to an indurated duripan and 23 to 30 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 10 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Haploduridic Durixerolls

Typical profile
A—0 to 10 inches; very stony sandy loam
Bw—10 to 15 inches; very stony loam
Bkq—15 to 22 inches; extremely stony loam
Bkqm—22 to 24 inches; cemented material
2R—24 to 34 inches; unweathered bedrock

Minor Components

Rehfield soils
Percentage of map unit: 10 percent
Landform: Lava plains

Rekima soils
Percentage of map unit: 10 percent
Landform: Buttes

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

11—Deerhorn-Wildors-Rekima complex, 2 to 15 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,500 to 4,700 feet (1,372 to 1,433 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 90 to 120 days

Map Unit Composition

Deerhorn and similar soils: 40 percent
Wildors and similar soils: 30 percent
Rekima and similar soils: 20 percent
Dissimilar minor components: 10 percent

Characteristics of Deerhorn

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive features: 20 to 30 inches to an indurated duripan and 22 to 35 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Argiduridic Durixerolls

Typical profile
A—0 to 9 inches; fine sandy loam
Bt—9 to 17 inches; sandy clay loam
Bk—17 to 21 inches; loam
2Bkqm—21 to 28 inches; cemented material
3R—28 to 38 inches; unweathered bedrock

Characteristics of Wildors

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits over a duripan over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive features: 21 to 28 inches to an indurated duripan and 23 to 30 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 10 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Haploduridic Durixerolls

Typical profile
A—0 to 9 inches; very stony sandy loam
Bw—9 to 15 inches; extremely stony loam
Bkq—15 to 21 inches; extremely stony loam
Bkqm—21 to 24 inches; cemented material
2R—24 to 34 inches; unweathered bedrock

Characteristics of Rekima

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium over basalt
Vegetation: Wyoming big sagebrush, bluebunch wheatgrass, Thurber needlegrass

Properties and qualities
Depth to restrictive features: 14 to 19 inches to an indurated duripan and 15 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)

Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 10 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW LOAMY 8-12 ARTRW8/PSSPS (R011XY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic, shallow Xeric Haplodurids

Typical profile
A—0 to 3 inches; very stony fine sandy loam
Bw—3 to 15 inches; very cobbly fine sandy loam
Bkq—15 to 18 inches; very cobbly fine sandy loam
Bkqm—18 to 19 inches; cemented material
2R—19 to 29 inches; unweathered bedrock

Minor Components

Rehfield soils
Percentage of map unit: 5 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

12—Deuce-Nargon-Lava flows complex, 2 to 12 percent slopes

Landscape: Lava plains
Major land resource area: 11—Snake River Plains
Elevation: 4,700 to 5,500 feet (1,433 to 1,676 meters)
Mean annual precipitation: 9 to 11 inches (229 to 279 millimeters)
Mean annual air temperature: 43 to 45 degrees F (6 to 7 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

Deuce and similar soils: 45 percent
Nargon and similar soils: 20 percent
Lava flows: 15 percent
Dissimilar minor components: 20 percent

Characteristics of Deuce

Setting
Landform: Volcanic cones
Down-slope shape: Linear

Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Wyoming big sagebrush, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, frigid Lithic Xeric Haplocalcids

Typical profile
A—0 to 2 inches; stony silt loam
Bk—2 to 6 inches; silt loam
Bkq—6 to 19 inches; silt loam
2R—19 to 29 inches; unweathered bedrock

Characteristics of Nargon

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Mixed alluvium over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 1
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None

Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 5 inches; silt loam
Bk—5 to 15 inches; clay loam
Bkq—15 to 22 inches; stony loam
2R—22 to 32 inches; unweathered bedrock

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

Minor Components

Pingree soils
Percentage of map unit: 10 percent
Landform: Lava plains

Coffee soils
Percentage of map unit: 5 percent
Landform: Lava plains

Note: More information about the Pingree and Coffee soils is in the soil survey of Butte County Area, Idaho, Parts of Butte and Bingham Counties.

Splittop soils
Percentage of map unit: 5 percent
Landform: Lava plains

13—Drage gravelly loam, cool, 2 to 15 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,100 feet (1,463 to 1,859 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Drage, cool, and similar soils: 80 percent
Dissimilar minor components: 20 percent

Characteristics of Drage, Cool

Setting
Landform: Hillslopes
Landform position (two-dimensional): Toeslopes
Down-slope shape: Linear
Across-slope shape: Linear

Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 14 inches; gravelly loam
Bt—14 to 30 inches; very gravelly clay loam
Bk—30 to 61 inches; extremely gravelly sandy loam

Minor Components

Little Wood soils
Percentage of map unit: 10 percent
Landform: Stream terraces

Note: More information about the Little Wood soils is in the soil survey of Blaine County Area, Idaho.

Molyneux soils
Percentage of map unit: 10 percent
Landform: Fan remnants

14—Drage very gravelly loam, cool, 0 to 3 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,000 to 6,100 feet (1,524 to 1,859 meters)
Mean annual precipitation: 14 to 16 inches (356 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 80 days

Map Unit Composition

Drage, cool, and similar soils: 85 percent
Dissimilar minor components: 15 percent

Characteristics of Drage, Cool

Setting
Landform: Hillslopes
Landform position (two-dimensional): Toeslopes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 3 percent
Parent material: Mixed alluvium
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 16 inches; very gravelly loam
Bt—16 to 41 inches; very gravelly clay loam
Bk—41 to 61 inches; extremely gravelly sandy loam

Minor Components

Bringmee soils
Percentage of map unit: 5 percent
Landform: Fan remnants

Isknat soils, clay subsoil
Percentage of map unit: 5 percent
Landform: Stream terraces

Isknat soils
Percentage of map unit: 5 percent
Landform: Stream terraces

Note: More information about the Isknat soils is in the soil survey of Blaine County Area, Idaho.

15—Echocrater gravelly ashy loamy sand, 20 to 40 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,870 to 6,400 feet (1,483 to 1,952 meters)
Mean annual precipitation: 12 to 18 inches (305 to 457 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

Echocrater and similar soils: 85 percent
Dissimilar minor components: 15 percent

Characteristics of Echocrater

Setting
Landform: Volcanic cones
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): South
Aspect (range): Northeast to west (clockwise)
Slope range: 20 to 40 percent
Parent material: Colluvium derived from volcanic ash and cinders
Vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needle and thread, phlox, serviceberry

Properties and qualities
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal over fragmental or cindery, glassy, frigid Typic Vitrixerands

Typical profile
A1—0 to 3 inches; gravelly ashy loamy sand
A2—3 to 8 inches; gravelly ashy loamy sand

Bw—8 to 15 inches; very gravelly ashy loamy sand
2BC—15 to 25 inches; very gravelly ashy loamy sand
2C—25 to 60 inches; cinders

Minor Components

Infernocone soils
Percentage of map unit: 10 percent
Landform: Volcanic cones

Cinder land
Percentage of map unit: 5 percent
Landform: Volcanic cones

16—Farmell-Power-Playas complex, 0 to 2 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,000 to 4,600 feet (1,219 to 1,402 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 95 to 120 days

Map Unit Composition

Farmell and similar soils: 55 percent
Power and similar soils: 20 percent
Playas: 15 percent
Dissimilar minor component: 10 percent

Characteristics of Farmell

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 2 percent
Parent material: Mixed silty alluvium
Vegetation: Threetip sagebrush, sedge, arrowleaf balsamroot, bluebunch wheatgrass, wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Very high (linear extensibility percentage about 17)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very high (about 13.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: PLAYA 8-12 ARTR4/PSSPS (R011BY008ID)

Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine, smectitic, mesic Xeric Haplargids

Typical profile
A—0 to 5 inches; silt loam
Bt1—5 to 8 inches; silty clay loam
Bt2—8 to 16 inches; clay
Bt3—16 to 36 inches; silty clay
Bk1—36 to 56 inches; silty clay loam
Bk2—56 to 80 inches; silty clay

Characteristics of Power

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 2 percent
Parent material: Mixed alluvium and/or loess
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-silty, mixed, superactive, mesic Xeric Calciargids

Typical profile
A—0 to 10 inches; silt loam
Bt—10 to 23 inches; silt loam
Bkq1—23 to 40 inches; silt loam
Bkq2—40 to 64 inches; very fine sandy loam

Characteristics of Playas

Description of areas: Small, closed basins that contain shallow water during spring snowmelt and after thunderstorms and are generally devoid of vegetation due to sodic conditions
Landform: Playas
Slope range: 0 to 2 percent
Parent material: Mixed alluvium and/or loess

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Strongly saline (about 24 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 200
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Very poorly drained
Flooding frequency: None
Ponding frequency: Frequent (see Water Features table)
Depth to seasonal high water table: At the soil surface (see Water Features table)
Available water capacity (entire profile): Very low (about 1.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Hydric soil status: Hydric
Hydrologic soil group: D
Soil classification: Miscellaneous land type

Typical profile
C—0 to 60 inches; stratified silty clay loam to clay

Minor Component

Farmell soils, very stony surface
Percentage of map unit: 10 percent
Landform: Lava plains

17—Goodalfs-Craters association, 0 to 5 percent slopes

Landscape: Valleys
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,500 to 6,120 feet (1,676 to 1,866 meters)
Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Goodalfs and similar soils: 55 percent
Craters and similar soils: 40 percent
Dissimilar minor component: 5 percent

Characteristics of Goodalfs

Setting
Landform: Valley floors
Landform position (two-dimensional): Toeslopes
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Aspect (range): All aspects
Slope range: 0 to 1 percent
Parent material: Silty alluvium and/or loess
Vegetation: Basin wildrye

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7)

Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Moderately well drained
Flooding frequency: None
Ponding frequency: Occasional (see Water Features table)
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 12 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: Loamy Bottom 12-16 LECI4 (R010AY042ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Vitrandic Haploxerolls

Typical profile
A—0 to 3 inches; medial silt loam
Bw1—3 to 10 inches; ashy silt loam
Bw2—10 to 24 inches; ashy silt loam
Bw3—24 to 40 inches; ashy silty clay loam
Bw4—40 to 60 inches; ashy silt loam

Characteristics of Craters

Setting
Landform: Fan remnants
Down-slope shape: Concave
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 5 percent
Parent material: Alluvium derived from volcanic ash and/or cinders
Vegetation: Idaho fescue, bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: Cindery North 12-16 ARTRV-PUTR2/FEID-PSSPS (R010AY047ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial, amorphic, frigid Humic Vitrixerands

Typical profile
A1—0 to 4 inches; very gravelly medial sandy loam
A2—4 to 10 inches; very gravelly medial sandy loam
Bw1—10 to 22 inches; very gravelly medial sandy loam
Bw2—22 to 38 inches; gravelly medial sandy loam
Bw3—38 to 60 inches; gravelly medial sandy loam

Minor Component

Huddle soils
Percentage of map unit: 5 percent
Landform: Lava plains

18—Goodington-Manard complex, 2 to 8 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,200 feet (1,463 to 1,890 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 43 degrees F (4 to 6 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Goodington and similar soils: 45 percent
Manard and similar soils: 40 percent
Dissimilar minor components: 15 percent

Characteristics of Goodington

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Loess over basalt
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass (fig. 6)

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric

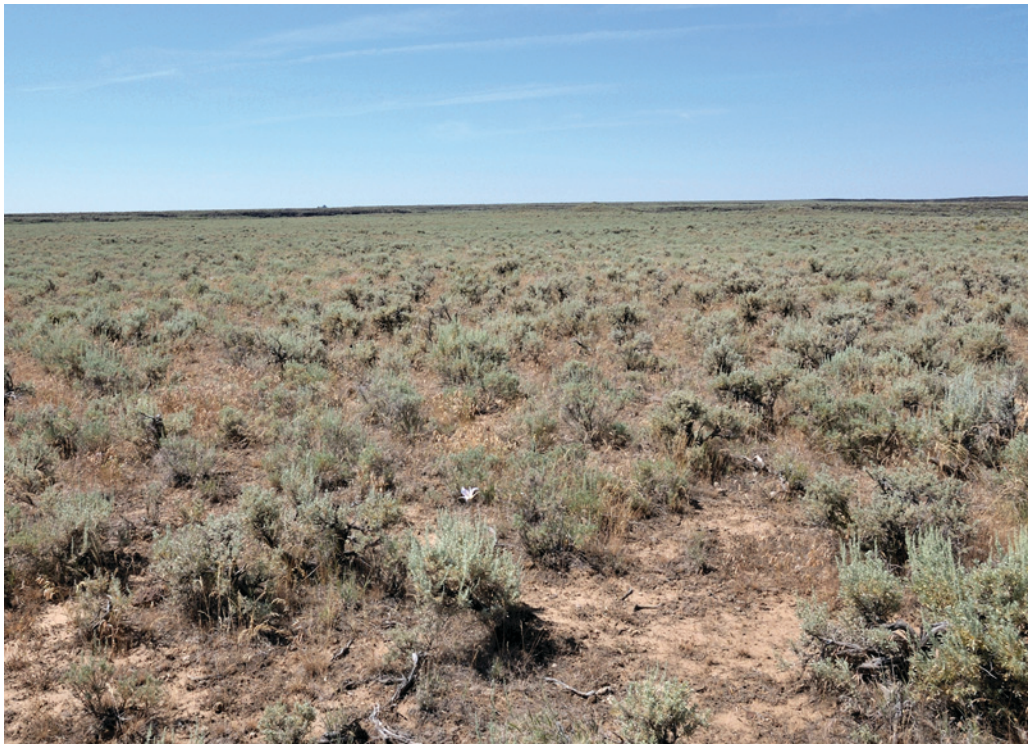


Figure 6.—Typical vegetation on the Goodington soil in an area of Goodington-Manard complex, 2 to 8 percent slopes, looking southwest. The ecological site is LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID).

Hydrologic soil group: D
Taxonomic classification: Fine, smectitic, frigid Typic Palexerolls

Typical profile
A—0 to 10 inches; silt loam
Bt—10 to 26 inches; silty clay
Bk—26 to 56 inches; silty clay loam
R—56 to 66 inches; unweathered bedrock

Characteristics of Manard

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Colluvium and residuum derived from rhyolite and/or basalt
Vegetation: Idaho fescue, alkali sagebrush, narrowleaf pussytoes

Properties and qualities
Depth to restrictive features: 20 to 37 inches to an indurated duripan and 20 to 38 inches to lithic bedrock
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 5 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: CLAYEY 12-16 ARARL/FEID (R010AY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Fine, smectitic, frigid Typic Durixerolls

Typical profile
A—0 to 11 inches; stony silt loam
Bt—11 to 20 inches; silty clay
Btk—20 to 26 inches; clay
Bkqm—26 to 28 inches; cemented material
R—28 to 38 inches; unweathered bedrock

Minor Components

Manard soils, shallow
Percentage of map unit: 5 percent
Landform: Lava plains

Manard soils, silt loam surface
Percentage of map unit: 5 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

19—Hal-Moonville association, 15 to 60 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,300 to 8,500 feet (1,615 to 2,591 meters)
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 37 to 45 degrees F (3 to 7 degrees C)
Frost-free period: 40 to 85 days

Map Unit Composition

Hal and similar soils: 60 percent
Moonville and similar soils: 25 percent
Dissimilar minor components: 15 percent

Characteristics of Hal

Setting
Landform: Hillslopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)

Slope range: 15 to 60 percent
Parent material: Volcanic ash and cinders
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial, amorphic Humic Xeric Vitricryands

Typical profile
A1—0 to 6 inches; gravelly medial loam
A2—6 to 12 inches; gravelly medial loam
Bw1—12 to 24 inches; gravelly medial loam
Bw2—24 to 40 inches; gravelly medial loam
2C—40 to 60 inches; extremely gravelly ashy loamy coarse sand

Characteristics of Moonville

Setting
Landform: Hillslopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): South
Aspect (range): Southeast to west (clockwise)
Slope range: 15 to 60 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 10 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None

Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 12 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial, amorphic, frigid Typic Vitrixerands

Typical profile
A—0 to 7 inches; medial loam
Bw1—7 to 15 inches; medial loam
Bw2—15 to 31 inches; medial loam
Bk—31 to 60 inches; medial loam

Minor Components

Grassycone soils
Percentage of map unit: 10 percent
Landform: Mountain slopes

Huddle soils
Percentage of map unit: 5 percent
Landform: Lava plains

20—Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes

Landscape: Mountains
Major land resource area: 12—Lost River Valleys and Mountains
Elevation: 5,000 to 9,000 feet (1,524 to 2,743 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 36 to 43 degrees F (2 to 6 degrees C)
Frost-free period: 10 to 80 days

Map Unit Composition

Howcan and similar soils: 35 percent
Zeebar and similar soils: 25 percent
Hutchley and similar soils: 20 percent
Dissimilar minor components: 20 percent

Characteristics of Howcan

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Footslopes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 15 to 60 percent
Parent material: Colluvium over latite and/or andesite
Vegetation: Bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)

Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R012XY012ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical profile
A1—0 to 4 inches; loam
A2—4 to 10 inches; extremely cobbly loam
Bt—10 to 38 inches; extremely stony loam
BC—38 to 54 inches; extremely stony sandy loam
R—54 to 64 inches; unweathered bedrock

Characteristics of Zeebar

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Footslopes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 15 to 50 percent
Parent material: Colluvium derived from igneous rock
Vegetation: Idaho fescue, mountain big sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 16-22 ARTRV/FEID (R012XY021ID)
Hydric soil status: Not hydric
Hydrologic soil group: C

Taxonomic classification: Loamy-skeletal, mixed, superactive Xeric Argicryolls

Typical profile
A—0 to 3 inches; gravelly loam
BA—3 to 19 inches; gravelly loam
Bt—19 to 41 inches; very gravelly clay loam
C—41 to 60 inches; extremely gravelly loam

Characteristics of Hutchley

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Concave
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 15 to 35 percent
Parent material: Loess and colluvium over latite and/or andesite
Vegetation: Low sagebrush, bluebunch wheatgrass, Hooker's balsamroot

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: CLAYEY SOUTH SLOPE 12-16 ARAR8/PSSPS (R012XY029ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical profile
A—0 to 4 inches; gravelly loam
Bt—4 to 11 inches; very cobbly clay loam
R—11 to 21 inches; unweathered bedrock

Minor Components

Hagenbarth soils
Percentage of map unit: 10 percent
Landform: Mountain slopes

Donkehill soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Note: More information about the Hagenbarth and Donkehill soils is in the soil survey of Butte County Area, Idaho, Parts of Butte and Bingham Counties.

Rock outcrop
Percentage of map unit: 5 percent
Landform: Mountain slopes

21—Huddle-Moonville complex, 2 to 12 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,600 to 6,000 feet (1,402 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

Huddle and similar soils: 65 percent
Moonville and similar soils: 20 percent
Dissimilar minor components: 15 percent

Characteristics of Huddle

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Volcanic ash, cinders, and/or eolian deposits over volcanic rock
Vegetation: Basin wildrye, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 4
Calcium carbonate equivalent: 32 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRT/LECI4 (R011BY007ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial, amorphic, frigid Typic Vitrixerands

Typical profile
A—0 to 2 inches; gravelly medial loam
Bw1—2 to 7 inches; medial loam
Bw2—7 to 19 inches; medial loam
Bk1—19 to 39 inches; medial loam

Bk2—39 to 50 inches; loam
2R—50 to 60 inches; unweathered bedrock

Characteristics of Moonville

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 10 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 12 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial, amorphic, frigid Typic Vitrixerands

Typical profile
A—0 to 7 inches; medial loam
Bw1—7 to 15 inches; medial loam
Bw2—15 to 31 inches; medial loam
Bk—31 to 60 inches; medial loam

Minor Components

Splittop soils
Percentage of map unit: 10 percent
Landform: Lava plains

Cinderhurst soils
Percentage of map unit: 5 percent
Landform: Lava fields

22—Hutton clay loam, 0 to 2 percent slopes

Landscape: Valleys
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,950 to 6,000 feet (1,509 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)

Mean annual air temperature: 41 to 45 degrees F (5 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Hutton and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Hutton

Setting
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 2 percent
Parent material: Volcanic ash and/or mixed alluvium
Vegetation: Sedge, slender wheatgrass, tufted hairgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Natural drainage class: Poorly drained
Flooding frequency: Frequent (see Water Features table)
Ponding frequency: None
Depth to seasonal high water table: About 12 to 30 inches (see Water Features table)
Available water capacity (entire profile): Moderate (about 8.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4w
Ecological site: WET MEADOW CAREX-JUNCUS (R010AY039ID)
Hydric soil status: Hydric
Hydrologic soil group: D
Taxonomic classification: Fine, smectitic, frigid Cumulic Vertic Endoaquolls

Typical profile
A—0 to 4 inches; clay loam
Bg—4 to 19 inches; clay loam
Cg—19 to 62 inches; clay

Minor Components

Carey Lake soils
Percentage of map unit: 5 percent
Landform: Fan remnants

Marshdale soils
Percentage of map unit: 5 percent
Landform: Flood plains

Note: More information about the Marshdale soils is in the soil survey of Blaine County Area, Idaho.

23—Infernocone gravelly ashy sandy loam, 2 to 20 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,840 to 6,320 feet (1476 to 1927 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 70 to 110 days

Map Unit Composition

Infernocone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Characteristics of Infernocone

Setting
Landform: Volcanic cones
Down-slope shape: Concave
Across-slope shape: Linear
Aspect (representative): Northeast
Aspect (range): Southwest to east (clockwise)
Slope range: 2 to 20 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 25 to 40 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal over fragmental or cindery, glassy, frigid Humic Vitrixerands

Typical profile
A1—0 to 5 inches; gravelly ashy sandy loam
A2—5 to 10 inches; gravelly ashy sandy loam
Bw—10 to 25 inches; gravelly ashy sandy loam
2BC—25 to 35 inches; very gravelly ashy sandy loam
2C—35 to 60 inches; cinders

Minor Components

Northcrater soils
Percentage of map unit: 10 percent
Landform: Volcanic cones

Cinder land
Percentage of map unit: 5 percent
Landform: Volcanic cones

24—Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,890 to 6,420 feet (1,492 to 1,958 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 46 degrees F (4 to 8 degrees C)
Frost-free period: 70 to 110 days

Map Unit Composition

Infernocone and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Infernocone

Setting
Landform: Volcanic cones
Down-slope shape: Concave
Across-slope shape: Linear
Aspect (representative): Northeast
Aspect (range): Southwest to east (clockwise)
Slope range: 20 to 40 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush (figs. 7 and 8).

Properties and qualities
Depth to restrictive feature: 25 to 40 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)

Figure 7.—Typical plant community and landscape of Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes. The ecological site is NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID).

Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal over fragmental or cindery, glassy, frigid Humic Vitrixerands

Typical profile
A1—0 to 5 inches; gravelly ashy sandy loam
A2—5 to 10 inches; gravelly ashy sandy loam
Bw—10 to 25 inches; gravelly ashy sandy loam
2BC—25 to 35 inches; very gravelly ashy sandy loam
2C—35 to 60 inches; cinders

Minor Components

Northcrater soils
Percentage of map unit: 7 percent
Landform: Volcanic cones

Cinder land
Percentage of map unit: 3 percent
Landform: Volcanic cones

25—Justesen loam, 2 to 4 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,700 to 6,000 feet (1,433 to 1,829 meters)

Figure 8.—Closeup view of the typical plant community on Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes. The surface of the soil is covered with cinders.

Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Justesen and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Justesen

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Mixed alluvium
Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3c
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 7 inches; loam
Bt—7 to 24 inches; clay loam
Bk—24 to 62 inches; fine sandy loam

Minor Components

Goodington soils
Percentage of map unit: 5 percent
Landform: Lava plains

Manard soils
Percentage of map unit: 5 percent
Landform: Lava plains

26—Justesen loam, 4 to 8 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,700 to 6,000 feet (1,433 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Justesen and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Justesen

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Mixed alluvium
Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)

Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 7 inches; loam
Bt—7 to 24 inches; clay loam
Bk—24 to 62 inches; fine sandy loam

Minor Components

Bringmee soils
Percentage of map unit: 5 percent
Landform: Fan remnants

Goodington soils
Percentage of map unit: 5 percent
Landform: Lava plains

27—Justesen-Drage complex, 1 to 20 percent slopes

Landscape: Foothills
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,800 to 7,000 feet (1,768 to 2,134 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 80 days

Map Unit Composition

Justesen and similar soils: 45 percent
Drage and similar soils: 40 percent
Dissimilar minor components: 15 percent

Characteristics of Justesen

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): East
Aspect (range): Northeast to southeast (clockwise)
Slope range: 1 to 20 percent
Parent material: Mixed alluvium

Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 10 inches; loam
Bt—10 to 25 inches; loam
Bk—25 to 60 inches; fine sandy loam

Characteristics of Drage

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southeast
Aspect (range): Northeast to southwest (clockwise)
Slope range: 5 to 20 percent
Parent material: Mixed alluvium
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 6 inches; gravelly loam
BA—6 to 15 inches; gravelly clay loam
Bt—15 to 30 inches; very cobbly clay loam
Bk1—30 to 43 inches; extremely cobbly clay loam
Bk2—43 to 60 inches; extremely cobbly loam

Minor Components

Dredge soils
Percentage of map unit: 10 percent
Landform: Fan remnants

Note: More information about the Dredge soils is in the soil survey of Blaine County Area, Idaho.

Soen soils
Percentage of map unit: 5 percent
Landform: Lava plains

28—Lava flows

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Description of areas: Relatively recent outpourings of lava with little or no vegetation

29—Lava flows-Cinderhurst complex, 2 to 15 percent slopes

Landscape: Lava plains (fig. 9)
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,000 feet (1,463 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 43 to 45 degrees F (6 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Lava flows: 75 percent
Cinderhurst and similar soils: 20 percent
Dissimilar minor component: 5 percent

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation (fig. 10)

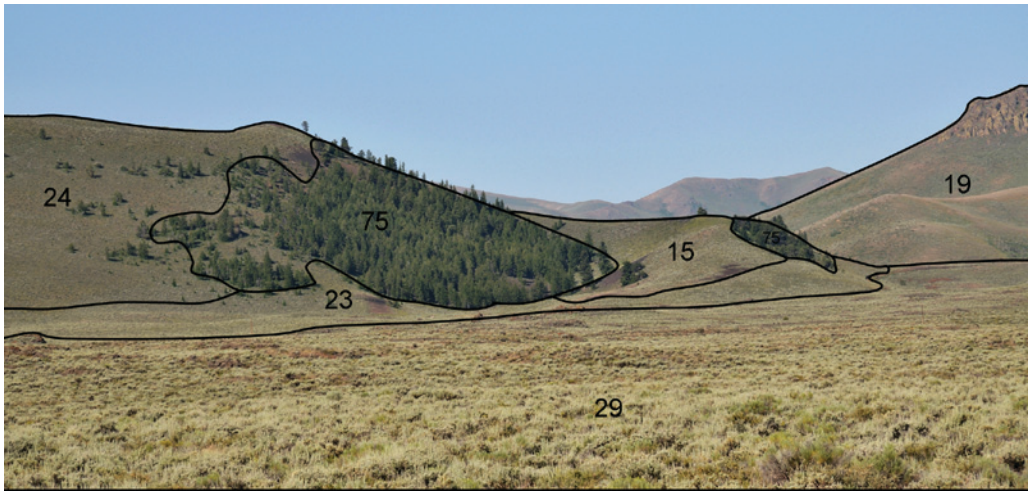


Figure 9.—Soil-landscape relationship in an area of Sunset Cone, looking toward the west. Numbers indicate detailed soil map units.

Figure 10.—Crack in the Pahoehoe lava in an area of Lava flows-Cinderhurst complex, 2 to 15 percent slopes.

Characteristics of Cinderhurst

Setting

Landform: Lava fields
Down-slope shape: Linear
Across-slope shape: Linear

Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits, volcanic ash, and cinders over basalt
Vegetation: Mountain big sagebrush (fig. 11)

Properties and qualities
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.7 inch)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Medial-skeletal, amorphic, frigid Lithic Vitrixerands

Figure 11.—Typical vegetation on the Cinderhurst soil in an area of Lava flows-Cinderhurst complex, 2 to 15 percent slopes. The ecological site is MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID).

Typical profile
A—0 to 3 inches; extremely cobbly medial silt loam
Bw—3 to 8 inches; very cobbly medial silt loam
2R—8 to 18 inches; unweathered bedrock

Minor Component

Cinderhurst soils, moderately deep
Percentage of map unit: 5 percent
Landform: Lava fields

30—Lava flows-Cinderhurst, extremely shallow complex, 2 to 15 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,380 to 6,100 feet (1,640 to 1,859 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Lava flows: 70 percent
Cinderhurst, extremely shallow, and similar soils: 20 percent
Dissimilar minor component: 10 percent

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

Characteristics of Cinderhurst, Extremely Shallow

Setting
Landform: Lava fields
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Eolian deposits, volcanic ash, and cinders over basalt
Vegetation: Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 1 to 4 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.2 inch)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)

Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Medial-skeletal, amorphic, frigid Lithic Vitrixerands

Typical profile
A—0 to 2 inches; extremely cobbly medial silt loam
2R—2 to 12 inches; unweathered bedrock

Minor Component

Cinderhurst soils, moderately deep
Percentage of map unit: 10 percent
Landform: Lava fields

31—Lavacreek-Dollarhide complex, 15 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 7,000 to 9,300 feet (2,134 to 2,835 meters)
Mean annual precipitation: 16 to 24 inches (406 to 610 millimeters)
Mean annual air temperature: 36 to 41 degrees F (2 to 5 degrees C)
Frost-free period: 30 to 60 days

Map Unit Composition

Lavacreek and similar soils: 65 percent
Dollarhide and similar soils: 25 percent
Dissimilar minor components: 10 percent

Characteristics of Lavacreek

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 15 to 60 percent
Parent material: Volcanic ash, eolian deposits, and/or tephra over colluvium over sandstone, conglomerate, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical profile
A—0 to 10 inches; very gravelly medial silt loam
Bw1—10 to 19 inches; very cobbly medial loam
Bw2—19 to 36 inches; extremely cobbly medial loam
BC—36 to 42 inches; extremely cobbly medial sandy loam
2C—42 to 59 inches; extremely cobbly sandy loam
2R—59 to 69 inches; unweathered bedrock

Characteristics of Dollarhide

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 15 to 60 percent
Parent material: Colluvium over siltstone, conglomerate, sandstone, and/or quartzite
Vegetation: Idaho fescue, hotsprings sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical profile
A—0 to 8 inches; very gravelly silt loam
Bw—8 to 13 inches; very gravelly loam
2R—13 to 23 inches; unweathered bedrock

Minor Components

Blackspar soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Vitale soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

32—Lavacreek-Dollarhide complex, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,500 to 8,500 feet (1,676 to 2,591 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 37 to 41 degrees F (3 to 5 degrees C)
Frost-free period: 30 to 60 days

Map Unit Composition

Lavacreek and similar soils: 65 percent
Dollarhide and similar soils: 20 percent
Dissimilar minor components: 15 percent

Characteristics of Lavacreek

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Volcanic ash, eolian deposits, and/or tephra over colluvium over sandstone, conglomerate, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical profile
A—0 to 10 inches; very gravelly medial silt loam
Bw1—10 to 19 inches; very cobbly medial loam
Bw2—19 to 36 inches; extremely cobbly medial loam
BC—36 to 42 inches; extremely cobbly medial sandy loam
2C—42 to 59 inches; extremely cobbly sandy loam
2R—59 to 69 inches; unweathered bedrock

Characteristics of Dollarhide

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium over siltstone, conglomerate, sandstone, and/or quartzite
Vegetation: Idaho fescue, hotsprings sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical profile
A—0 to 7 inches; very gravelly silt loam
Bw—7 to 13 inches; very gravelly loam
2R—13 to 23 inches; unweathered bedrock

Minor Components

Ketchum soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Note: More information about the Ketchum soils is in the soil survey of Blaine County Area, Idaho.

Rock outcrop
Percentage of map unit: 5 percent
Landform: Mountain slopes

Vitale soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

33—Lavacreek-Dollarhide complex, cold, 15 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 7,000 to 9,250 feet (2,134 to 2,819 meters)
Mean annual precipitation: 16 to 24 inches (406 to 610 millimeters)
Mean annual air temperature: 36 to 41 degrees F (2 to 5 degrees C)
Frost-free period: 30 to 60 days

Map Unit Composition

Lavacreek, cold, and similar soils: 65 percent
Dollarhide, cold, and similar soils: 25 percent
Dissimilar minor components: 10 percent

Characteristics of Lavacreek, Cold

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 15 to 60 percent
Parent material: Volcanic ash, eolian deposits, and/or tephra over colluvium over sandstone, conglomerate, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained

Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical profile
A—0 to 10 inches; very gravelly medial silt loam
Bw1—10 to 19 inches; very cobbly medial loam
Bw2—19 to 36 inches; extremely cobbly medial loam
BC—36 to 42 inches; extremely cobbly medial sandy loam
2C—42 to 59 inches; extremely cobbly sandy loam
2R—59 to 69 inches; unweathered bedrock

Characteristics of Dollarhide, Cold

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 15 to 60 percent
Parent material: Colluvium over siltstone, conglomerate, sandstone, and/or quartzite
Vegetation: Idaho fescue, hotsprings sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical profile
A—0 to 7 inches; very gravelly silt loam
Bw—7 to 13 inches; very gravelly loam
2R—13 to 23 inches; unweathered bedrock

Minor Components

Blackspar soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Vitale soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

34—Lavacreek-Dollarhide-Grassycone complex, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 6,000 to 8,500 feet (1,829 to 2,591 meters)
Mean annual precipitation: 16 to 24 inches (406 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F (3 to 6 degrees C)
Frost-free period: 30 to 60 days

Map Unit Composition

Lavacreek and similar soils: 45 percent
Dollarhide and similar soils: 20 percent
Grassycone and similar soils: 20 percent
Dissimilar minor components: 15 percent

Characteristics of Lavacreek

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): North
Aspect (range): North to northeast (clockwise)
Slope range: 30 to 60 percent
Parent material: Volcanic ash, eolian deposits, and/or tephra over colluvium over sandstone, conglomerate, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)

Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical profile
A—0 to 10 inches; very gravelly medial silt loam
Bw1—10 to 19 inches; very cobbly medial loam
Bw2—19 to 36 inches; extremely cobbly medial loam
BC—36 to 42 inches; extremely cobbly medial sandy loam
2C—42 to 59 inches; extremely cobbly sandy loam
2R—59 to 69 inches; unweathered bedrock

Characteristics of Dollarhide

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): North
Aspect (range): North to northeast (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium over siltstone, conglomerate, sandstone, and/or quartzite
Vegetation: Idaho fescue, hotsprings sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical profile
A—0 to 8 inches; very gravelly silt loam
Bw—8 to 13 inches; very gravelly loam
2R—13 to 23 inches; unweathered bedrock

Characteristics of Grassycone

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Toeslopes
Down-slope shape: Convex, concave
Across-slope shape: Convex, concave

Aspect (representative): North
Aspect (range): North to northeast (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium derived from volcanic ash and cinders with an influence of loess
Vegetation: Pinegrass, mountain brome, quaking aspen

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very high (about 14.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: QUAKING ASPEN 20+ POTR5 (R010AY016ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Medial, amorphic Humic Xeric Vitricryands

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; medial fine sandy loam
A2—3 to 9 inches; gravelly medial fine sandy loam
Bw—9 to 57 inches; gravelly medial fine sandy loam
2C—57 to 65 inches; very cobbly loam

Minor Components

Ketchum soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Note: More information about the Ketchum soils is in the soil survey of Butte County Area, Idaho, Parts of Butte and Bingham Counties.

Rock outcrop
Percentage of map unit: 5 percent
Landform: Mountain slopes

Vitale soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

35—Lavacreek-Vitale association, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 6,000 to 8,500 feet (1,829 to 2,591 meters)
Mean annual precipitation: 16 to 20 inches (406 to 508 millimeters)

Mean annual air temperature: 37 to 43 degrees F (3 to 6 degrees C)
Frost-free period: 30 to 90 days

Map Unit Composition

Lavacreek and similar soils: 45 percent
Vitale and similar soils: 35 percent
Dissimilar minor components: 20 percent

Characteristics of Lavacreek

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Volcanic ash, eolian deposits, and/or tephra over colluvium derived from sandstone, conglomerate, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical profile
A—0 to 10 inches; very gravelly medial silt loam
Bw1—10 to 19 inches; very cobbly medial loam
Bw2—19 to 36 inches; extremely cobbly medial loam
BC—36 to 42 inches; extremely cobbly medial sandy loam
2C—42 to 59 inches; extremely cobbly sandy loam
2R—59 to 69 inches; unweathered bedrock

Characteristics of Vitale

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Footslopes
Down-slope shape: Concave
Across-slope shape: Concave

Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium over sandstone, conglomerate, and/or siltstone
Vegetation: Bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical profile
A1—0 to 3 inches; very cobbly loam
A2—3 to 10 inches; very cobbly loam
Bt1—10 to 19 inches; very cobbly clay loam
Bt2—19 to 24 inches; very cobbly clay loam
Bt3—24 to 33 inches; very cobbly loam
R—33 to 43 inches; unweathered bedrock

Minor Components

Dollarhide soils
Percentage of map unit: 10 percent
Landform: Mountain slopes

Blackspar soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Rock outcrop
Percentage of map unit: 5 percent
Landform: Mountain slopes

36—McBiggam silt loam, 2 to 8 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,300 to 5,600 feet (1,615 to 1,707 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 43 degrees F (4 to 6 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

McBiggam and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of McBiggam

Setting
Landform: Lava plains (fig. 12)
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Loess and silty alluvium over residuum derived from basalt
Vegetation: Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 5 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very high (about 13.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)

Figure 12.—Typical landscape in an area of McBiggam silt loam, 2 to 8 percent slopes, looking north toward the Pioneer Mountains. Numbers indicate detailed soil map units.

Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-silty, mixed, superactive, frigid Typic Palexerolls

Typical profile
A1—0 to 3 inches; silt loam
A2—3 to 10 inches; silt loam
BA—10 to 15 inches; silt loam
Bt—15 to 26 inches; silty clay loam
2Btb—26 to 36 inches; silty clay
2Btkb—36 to 46 inches; silty clay
2Bkb—46 to 80 inches; silty clay loam

Minor Components

McCarey soils
Percentage of map unit: 5 percent
Landform: Lava plains

Molyneux soils
Percentage of map unit: 5 percent
Landform: Lava plains

37—McCarey-Beartrap complex, 1 to 6 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,700 to 5,400 feet (1,433 to 1,646 meters)
Mean annual precipitation: 11 to 16 inches (279 to 406 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 75 to 100 days

Map Unit Composition

McCarey and similar soils: 45 percent
Beartrap and similar soils: 35 percent
Dissimilar minor components: 20 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 6 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained

Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4s
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; loam
Bt—11 to 18 inches; clay loam
Bk—18 to 28 inches; loam
2R—28 to 38 inches; unweathered bedrock

Characteristics of Beartrap

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 6 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Basin wildrye, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4c
Ecological site: LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aridic Calcixerolls

Typical profile
A—0 to 16 inches; loam
Bk—16 to 52 inches; fine sandy loam
2R—52 to 62 inches; unweathered bedrock

Minor Components

McCarey soils, shallow
Percentage of map unit: 10 percent
Landform: Lava plains

Molyneux soils
Percentage of map unit: 5 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

38—McCarey-Beartrap complex, 6 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,800 to 5,400 feet (1,463 to 1,646 meters)
Mean annual precipitation: 11 to 16 inches (279 to 406 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 75 to 100 days

Map Unit Composition

McCarey and similar soils: 55 percent
Beartrap and similar soils: 20 percent
Dissimilar minor components: 25 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 6 to 20 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; loam
Bt—11 to 18 inches; clay loam
Bk—18 to 28 inches; loam
2R—28 to 38 inches; unweathered bedrock

Characteristics of Beartrap

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 6 to 20 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Basin wildrye, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aridic Calcixerolls

Typical profile
A—0 to 16 inches; loam
Bk—16 to 52 inches; fine sandy loam
2R—52 to 62 inches; unweathered bedrock

Minor Components

McCarey soils, stony surface
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 10 percent
Landform: Lava plains

McCarey soils, shallow
Percentage of map unit: 5 percent
Landform: Lava plains

39—McCarey-Beartrap-Rock outcrop complex, 2 to 15 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,700 to 5,400 feet (1,433 to 1,646 meters)
Mean annual precipitation: 11 to 16 inches (279 to 406 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 75 to 100 days

Map Unit Composition

McCarey and similar soils: 40 percent
Beartrap and similar soils: 30 percent
Rock outcrop: 25 percent
Dissimilar minor component: 5 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; loam
Bt—11 to 18 inches; clay loam
Bk—18 to 28 inches; loam
2R—28 to 38 inches; unweathered bedrock

Characteristics of Beartrap

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Basin wildrye, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aridic Calcixerolls

Typical profile
A—0 to 16 inches; loam
Bk—16 to 52 inches; fine sandy loam
2R—52 to 62 inches; unweathered bedrock

Characteristics of Rock outcrop

Description of areas: Exposures of bare bedrock

Minor Component

McCarey soils, shallow
Percentage of map unit: 5 percent
Landform: Lava plains

40—McCarey-Justesen complex, 2 to 8 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,700 to 5,000 feet (1,433 to 1,524 meters)

Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 41 to 46 degrees F (5 to 8 degrees C)
Frost-free period: 70 to 110 days

Map Unit Composition

McCarey and similar soils: 50 percent
Justesen and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 10 inches; loam
Bt—10 to 22 inches; clay loam
Bk—22 to 37 inches; loam
2R—37 to 47 inches; unweathered bedrock

Characteristics of Justesen

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium

Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 14 inches; loam
Bt—14 to 31 inches; clay loam
Bk—31 to 64 inches; loam

Minor Components

McCarey soils, shallow
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 10 percent
Landform: Lava plains

41—McCarey-Molyneux complex, 2 to 8 percent slopes

Landscape: Plains (fig. 13)
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 5,400 feet (1,463 to 1,646 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 41 to 46 degrees F (5 to 8 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

McCarey and similar soils: 45 percent
Molyneux and similar soils: 30 percent
Dissimilar minor components: 25 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear

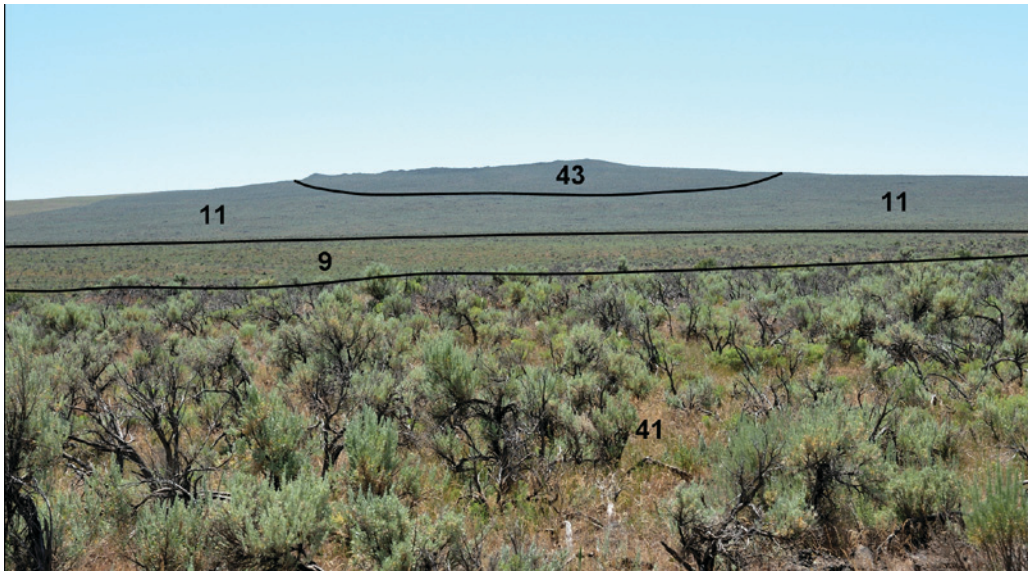


Figure 13.—Soil-landscape relationship in the Laidlaw Park area, looking south toward Laidlaw Butte, a low-shield volcano. Numbers indicate detailed soil map units.

Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 10 inches; loam
Bt—10 to 22 inches; clay loam
Bk—22 to 37 inches; loam
2R—37 to 47 inches; unweathered bedrock

Characteristics of Molyneux

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or colluvium
Vegetation: Idaho fescue, threetip sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTR4/FEID (R010AY023ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Ultic Argixerolls

Typical profile
A—0 to 13 inches; loam
Bt1—13 to 50 inches; clay loam
Bt2—50 to 75 inches; gravelly sandy clay loam

Minor Components

Bancroft soils
Percentage of map unit: 10 percent
Landform: Lava plains

Pedleford soils
Percentage of map unit: 10 percent
Landform: Buttes

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

42—McCarey-Molyneux-Rock outcrop complex, 2 to 15 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,800 to 5,400 feet (1,463 to 1,646 meters)

Mean annual precipitation: 11 to 16 inches (279 to 406 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 75 to 100 days

Map Unit Composition

McCarey and similar soils: 40 percent
Molyneux and similar soils: 25 percent
Rock outcrop: 20 percent
Dissimilar minor components: 15 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; loam
Bt—11 to 18 inches; clay loam
Bk—18 to 28 inches; loam
2R—28 to 38 inches; unweathered bedrock

Characteristics of Molyneux

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent

Parent material: Mixed alluvium and/or colluvium
Vegetation: Idaho fescue, threetip sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTR4/FEID (R010AY023ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Ultic Argixerolls

Typical profile
A—0 to 13 inches; loam
Bt—13 to 62 inches; loam

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

McCarey soils, shallow
Percentage of map unit: 10 percent
Landform: Lava plains

Beartrap soils
Percentage of map unit: 5 percent
Landform: Lava plains

43—McCarey-Pedleford complex, 2 to 30 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 5,400 feet (1,463 to 1,646 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 41 to 46 degrees F (5 to 8 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

McCarey and similar soils: 50 percent
Pedleford and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of McCarey

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 2 to 30 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 10 inches; loam
Bt—10 to 22 inches; clay loam
Bk—22 to 37 inches; loam
2R—37 to 47 inches; unweathered bedrock

Characteristics of Pedleford

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 2 to 30 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)

Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Calcic Haploxerolls

Typical profile
A—0 to 5 inches; very stony loam
Bw—5 to 13 inches; very stony loam
Bk1—13 to 29 inches; very stony silt loam
Bk2—29 to 33 inches; very cobbly loam
2R—33 to 43 inches; unweathered bedrock

Minor Components

Molyneux soils
Percentage of map unit: 10 percent
Landform: Lava plains

Bancroft soils
Percentage of map unit: 5 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

44—McCarey-Pedleford complex, 8 to 20 percent slopes

Landscape: Lava plains
Major land resource area: 11—Snake River Plains
Elevation: 4,700 to 5,400 feet (1,433 to 1,646 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 75 to 100 days

Map Unit Composition

McCarey and similar soils: 55 percent
Pedleford and similar soils: 30 percent
Dissimilar minor components: 15 percent

Characteristics of McCarey

Setting
Landform: Buttes
Down-slope shape: Linear

Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 8 to 20 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 11 inches; loam
Bt—11 to 18 inches; clay loam
Bk—18 to 28 inches; loam
2R—28 to 38 inches; unweathered bedrock

Characteristics of Pedleford

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 8 to 20 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None

Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Calcic Haploxerolls

Typical profile
A—0 to 6 inches; very stony loam
Bw—6 to 26 inches; very stony loam
Bk—26 to 34 inches; very stony silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Molyneux soils
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

45—McCarey-Rock outcrop complex, 0 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,500 to 5,500 feet (1,372 to 1,676 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 41 to 45 degrees F (5 to 7 degrees C)
Frost-free period: 70 to 95 days

Map Unit Composition

McCarey and similar soils: 55 percent
Rock outcrop: 25 percent
Dissimilar minor components: 20 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)

Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 5 inches; loam
Bt—5 to 22 inches; clay loam
Bk—22 to 35 inches; loam
2R—35 to 45 inches; unweathered bedrock

Characteristics of Rock outcrop

Description of areas: Exposures of bare bedrock

Minor Components

McCarey soils, shallow
Percentage of map unit: 10 percent
Landform: Lava plains

McCarey soils, deep
Percentage of map unit: 10 percent
Landform: Lava plains

46—McCarey-Splittop-Lava flows complex, 4 to 8 percent slopes

Landscape: Plains
Major land resource area: 12—Lost River Valleys and Mountains
Elevation: 5,200 to 5,500 feet (1,585 to 1,676 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 41 to 45 degrees F (5 to 7 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

McCarey and similar soils: 60 percent
Splittop and similar soils: 20 percent
Lava flows: 15 percent
Dissimilar minor component: 5 percent

Characteristics of McCarey

Setting
Landform: Lava plains
Down-slope shape: Linear

Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical profile
A—0 to 12 inches; silt loam
Bt—12 to 18 inches; clay loam
Bk—18 to 33 inches; loam
2R—33 to 43 inches; unweathered bedrock

Characteristics of Splittop

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 18 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None

Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 4 inches; loam
Bk—4 to 30 inches; loam
2R—30 to 40 inches; unweathered bedrock

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

Minor Component

Tenno soils
Percentage of map unit: 5 percent
Landform: Lava plains

47—McPan-Chijer complex, 1 to 6 percent slopes

Landscape: Lava plains
Major land resource area: 11—Snake River Plains
Elevation: 4,000 to 4,600 feet (1,219 to 1,402 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 95 to 120 days

Map Unit Composition

McPan and similar soils: 50 percent
Chijer and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of McPan

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 6 percent
Parent material: Silty alluvium and/or loess over volcanic rock
Vegetation: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive features: 20 to 39 inches to an indurated duripan and 21 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-silty, mixed, superactive, mesic Xeric Argidurids

Typical profile
A—0 to 6 inches; silt loam
Btk—6 to 20 inches; silty clay loam
Bkq—20 to 27 inches; cobbly loam
Bkqm—27 to 29 inches; cemented material
2R—29 to 39 inches; unweathered bedrock

Characteristics of Chijer

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 4 percent
Parent material: Eolian deposits
Vegetation: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Slightly saline (about 5 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical profile
A—0 to 6 inches; very fine sandy loam
Bk—6 to 11 inches; loam
Bkq—11 to 61 inches; very fine sandy loam

Minor Components

Starbuck soils
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

Taunton soils
Percentage of map unit: 5 percent
Landform: Buttes

48—Molyneux loam, 2 to 4 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,800 to 6,000 feet (1,463 to 1,829 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 41 to 46 degrees F (5 to 8 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Molyneux and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Molyneux

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Mixed alluvium and/or colluvium
Vegetation: Idaho fescue, threetip sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3c
Ecological site: LOAMY 12-16 ARTR4/FEID (R010AY023ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Ultic Argixerolls

Typical profile
A—0 to 13 inches; loam
Bt1—13 to 50 inches; clay loam
Bt2—50 to 75 inches; gravelly sandy clay loam

Minor Components

Bringmee soils
Percentage of map unit: 5 percent
Landform: Fan remnants

Hutton soils
Percentage of map unit: 5 percent
Landform: Flood plains

49—Nargon-Atom-Techicknot complex, 0 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,500 to 5,800 feet (1,372 to 1,768 meters)
Mean annual precipitation: 9 to 11 inches (229 to 279 millimeters)
Mean annual air temperature: 43 to 45 degrees F (6 to 7 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Nargon and similar soils: 35 percent
Atom and similar soils: 30 percent
Techicknot and similar soils: 25 percent
Dissimilar minor components: 10 percent

Characteristics of Nargon

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 1
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 5 inches; loam
Bk—5 to 15 inches; clay loam
Bkq—15 to 22 inches; stony loam
2R—22 to 32 inches; unweathered bedrock

Characteristics of Atom

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Moderately saline (about 12 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 22
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, frigid Sodic Xeric Haplocalcids

Typical profile
A1—0 to 3 inches; silt loam
A2—3 to 10 inches; silty clay loam
Bk—10 to 60 inches; silt loam

Characteristics of Techicknot

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls

Typical profile
A—0 to 4 inches; loam
Bt—4 to 29 inches; clay loam
Bk1—29 to 48 inches; loam
Bk2—48 to 60 inches; silt loam

Minor Components

Beartrap soils
Percentage of map unit: 5 percent
Landform: Lava plains

Deuce soils
Percentage of map unit: 2 percent
Landform: Volcanic cones

Splittop soils
Percentage of map unit: 2 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 1 percent
Landform: Lava plains

50—Nargon-Deuce-Lava flows complex, 2 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,500 to 5,800 feet (1,372 to 1,768 meters)
Mean annual precipitation: 9 to 11 inches (229 to 279 millimeters)
Mean annual air temperature: 43 to 45 degrees F (6 to 7 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Nargon and similar soils: 50 percent
Deuce and similar soils: 25 percent
Lava flows: 15 percent
Dissimilar minor components: 10 percent

Characteristics of Nargon

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): South
Aspect (range): East to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 1
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 2 inches; silt loam
Bk—2 to 7 inches; clay loam
Bkq1—7 to 11 inches; loam
Bkq2—11 to 21 inches; stony loam
2R—21 to 31 inches; unweathered bedrock

Characteristics of Deuce

Setting
Landform: Volcanic cones
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): South
Aspect (range): East to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Wyoming big sagebrush, bluebunch wheatgrass, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, frigid Lithic Xeric Haplocalcids

Typical profile
A—0 to 2 inches; stony silt loam
Bk—2 to 6 inches; silt loam
Bkq—6 to 19 inches; silt loam
2R—19 to 29 inches; unweathered bedrock

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

Minor Components

Atom soils
Percentage of map unit: 5 percent
Landform: Lava plains

Coffee soils
Percentage of map unit: 5 percent
Landform: Lava plains

Note: More information about the Coffee soils is in the soil survey of Butte County Area, Idaho, Parts of Butte and Bingham Counties.

51—Neeley-Hodad complex, 2 to 4 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,300 to 5,000 feet (1,311 to 1,524 meters)
Mean annual precipitation: 11 to 13 inches (279 to 330 millimeters)
Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Neeley and similar soils: 60 percent
Hodad and similar soils: 30 percent
Dissimilar minor components: 10 percent

Characteristics of Neeley

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Loess
Vegetation: Bluebunch wheatgrass, mountain big sagebrush, streambank wheatgrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Very slightly saline (about 2 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 15
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 12 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4c
Ecological site: LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls

Typical profile
A—0 to 10 inches; silt loam
Bw—10 to 16 inches; silt loam
Bk—16 to 60 inches; silt loam

Characteristics of Hodad

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Loess over basalt
Vegetation: Bluebunch wheatgrass, mountain big sagebrush, streambank wheatgrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 5
Calcium carbonate equivalent: 15 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls

Typical profile
A—0 to 7 inches; silt loam
Bw—7 to 17 inches; silt loam
Bk—17 to 36 inches; silt loam
2R—36 to 46 inches; unweathered bedrock

Minor Components

Portino soils
Percentage of map unit: 3 percent
Landform: Lava plains

Portneuf soils
Percentage of map unit: 3 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 2 percent
Landform: Lava plains

52—Pagari-Rehfield complex, 2 to 15 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,400 to 4,800 feet (1,341 to 1,463 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 90 to 120 days

Map Unit Composition

Pagari and similar soils: 45 percent
Rehfield and similar soils: 30 percent
Dissimilar minor components: 25 percent

Characteristics of Pagari

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium over basalt
Vegetation: Basin big sagebrush, basin wildrye, bluebunch wheatgrass, Sandberg bluegrass (fig. 14)

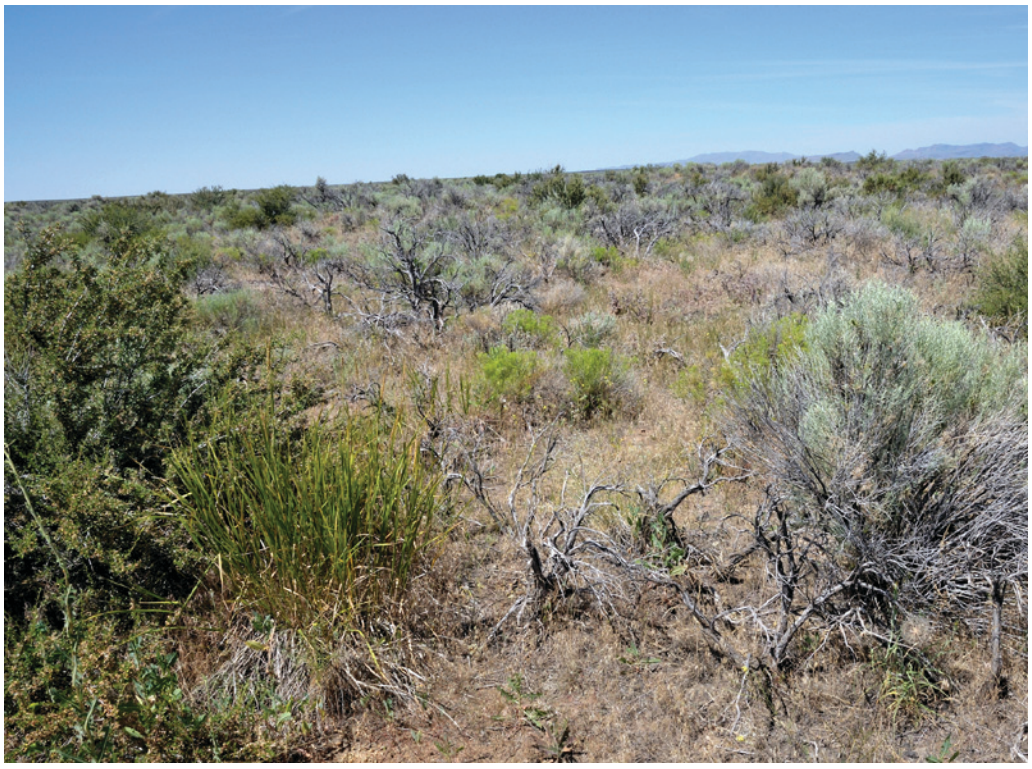


Figure 14.—Typical vegetation on the Pagari soil in an area of Pagari-Rehfield complex, 2 to 15 percent slopes. The ecological site is SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID).

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 18 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Calciargidic Argixerolls

Typical profile
A—0 to 11 inches; very cobbly sandy loam
AB—11 to 17 inches; very cobbly sandy loam
Bt—17 to 31 inches; extremely cobbly loam
Bk—31 to 46 inches; extremely cobbly loam
2R—46 to 56 inches; unweathered bedrock

Characteristics of Rehfield

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or eolian deposits
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass (fig. 15)

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8 inches)

Figure 15.—Typical vegetation on the Rehfield soil in an area of Pagari-Rehfield complex, 2 to 15 percent slopes. The ecological site is SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID).

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Ultic Argixerolls

Typical profile
A—0 to 10 inches; loamy sand
Bt—10 to 42 inches; sandy clay loam
2C—42 to 67 inches; loamy sand

Minor Components

Rock outcrop
Percentage of map unit: 15 percent
Landform: Lava plains

Cox soils
Percentage of map unit: 10 percent
Landform: Lava plains

53—Paulville-McPan-Starbuck complex, 1 to 8 percent slopes

Landscape: Lava plains
Major land resource area: 11—Snake River Plains

Elevation: 3,400 to 4,700 feet (1,036 to 1,433 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 100 to 120 days

Map Unit Composition

Paulville and similar soils: 35 percent
McPan and similar soils: 25 percent
Starbuck and similar soils: 20 percent
Dissimilar minor components: 20 percent

Characteristics of Paulville

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 4 percent
Parent material: Mixed alluvium, lacustrine deposits, and/or loess
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Very slightly saline (about 3 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Xeric Calciargids

Typical profile
A—0 to 6 inches; loam
Bt—6 to 30 inches; clay loam
Bk—30 to 50 inches; silt loam
2C—50 to 64 inches; loamy fine sand

Characteristics of McPan

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 8 percent

Parent material: Silty alluvium and/or loess over volcanic rock
Vegetation: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive features: 20 to 39 inches to an indurated duripan and 21 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-silty, mixed, superactive, mesic Xeric Argidurids

Typical profile
A—0 to 6 inches; silt loam
Btk—6 to 20 inches; silty clay loam
Bkq—20 to 27 inches; cobbly loam
Bkqm—27 to 29 inches; cemented material
2R—29 to 39 inches; unweathered bedrock

Characteristics of Starbuck

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 8 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 4 inches; very fine sandy loam
Bw—4 to 17 inches; very fine sandy loam
2R—17 to 27 inches; unweathered bedrock

Minor Components

Farmell soils
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 10 percent
Landform: Lava plains

54—Playas

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills

Characteristics of Playas

Setting
Description of areas: Small, closed basins that contain shallow water during spring snowmelt and after thunderstorms and are generally devoid of vegetation due to sodic conditions
Landform: Playas
Slope range: 0 to 2 percent
Parent material: Mixed alluvium

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Strongly saline (about 24 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 200
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Very poorly drained
Flooding frequency: None
Ponding frequency: Frequent (see Water Features table)
Depth to seasonal high water table: At the soil surface (see Water Features table)
Available water capacity (entire profile): Very low (about 1.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 8
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
C—0 to 60 inches; stratified silty clay loam to clay

55—Portino silt loam, 2 to 4 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,780 feet (1,280 to 1,458 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portino and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portino

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; silt loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Portino soils, stony loam
Percentage of map unit: 3 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 3 percent
Landform: Lava plains

Portneuf soils, bedrock substratum
Percentage of map unit: 2 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

56—Portino silt loam, 4 to 8 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,700 feet (1,280 to 1,433 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portino and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portino

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; silt loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Portino soils, stony loam surface
Percentage of map unit: 3 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 3 percent
Landform: Lava plains

Portneuf soils, bedrock substratum
Percentage of map unit: 2 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

57—Portino cobbly loam, 2 to 4 percent slopes, stony

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,770 feet (1,280 to 1,454 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portino, stony surface, and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent
Percentage of surface covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained

Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; cobbly loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Portino soils, silt loam surface
Percentage of map unit: 3 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 3 percent
Landform: Lava plains

Portneuf soils, bedrock substratum
Percentage of map unit: 2 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

58—Portino cobbly loam, 4 to 8 percent slopes, stony

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,700 feet (1,280 to 1,433 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portino, stony surface, and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Silty alluvium and/or loess over basalt

Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent
Percentage of surface covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; cobbly loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Portino soils, silt loam surface
Percentage of map unit: 3 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 3 percent
Landform: Lava plains

Portneuf soils, bedrock substratum
Percentage of map unit: 2 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

59—Portino, stony-Trevino, stony-Rock outcrop complex, 0 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 5,040 feet (1,280 to 1,537 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)

Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portino, stony surface, and similar soils: 40 percent
Trevino, stony surface, and similar soils: 25 percent
Rock outcrop: 20 percent
Dissimilar minor component: 15 percent

Characteristics of Portino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; cobbly loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Characteristics of Trevino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent

Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, low sagebrush, Nevada bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 10 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 6 inches; stony loam
Bw—6 to 12 inches; stony loam
Bk—12 to 19 inches; stony loam
2R—19 to 29 inches; unweathered bedrock

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Component

Portneuf soils
Percentage of map unit: 15 percent
Landform: Lava plains

60—Portneuf silt loam, bedrock substratum, 0 to 2 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,700 feet (1,280 to 1,433 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portneuf, bedrock substratum, and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portneuf, Bedrock Substratum

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 2 percent
Parent material: Silty alluvium, loess, and/or lacustrine deposits over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Slightly saline (about 5 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 5
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical profile
A—0 to 15 inches; silt loam
Bkq—15 to 57 inches; silt loam
2R—57 to 67 inches; unweathered bedrock

Minor Components

Portino soils
Percentage of map unit: 5 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 5 percent
Landform: Lava plains

61—Portneuf silt loam, bedrock substratum, 2 to 4 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,700 feet (1,280 to 1,433 meters)

Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portneuf, bedrock substratum, and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portneuf, Bedrock Substratum

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Silty alluvium, loess, and/or lacustrine deposits over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Slightly saline (about 5 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 5
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical profile
A—0 to 15 inches; silt loam
Bkq—15 to 57 inches; silt loam
2R—57 to 67 inches; unweathered bedrock

Minor Components

Portino soils
Percentage of map unit: 5 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 5 percent
Landform: Lava plains

62—Portneuf silt loam, bedrock substratum, 4 to 8 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,700 feet (1,280 to 1,433 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portneuf, bedrock substratum, and similar soils: 90 percent
Dissimilar minor components: 10 percent

Characteristics of Portneuf, Bedrock Substratum

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 8 percent
Parent material: Silty alluvium, loess, and/or lacustrine deposits over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Slightly saline (about 5 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 5
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical profile
A—0 to 15 inches; silt loam
Bkq—15 to 57 inches; silt loam
2R—57 to 67 inches; unweathered bedrock

Minor Components

Portino soils
Percentage of map unit: 5 percent
Landform: Lava plains

Trevino soils
Percentage of map unit: 5 percent
Landform: Lava plains

63—Portneuf-Quincy complex, 0 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 4,600 feet (1,280 to 1,402 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 53 degrees F (7 to 12 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Portneuf and similar soils: 60 percent
Quincy and similar soils: 30 percent
Dissimilar minor components: 10 percent

Characteristics of Portneuf

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 8 percent
Parent material: Silty alluvium, loess, and/or lacustrine deposits
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Slightly saline (about 5 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 6
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical profile
A—0 to 10 inches; fine sandy loam
Bkq—10 to 34 inches; silt loam
C—34 to 60 inches; silt loam

Characteristics of Quincy

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): South
Aspect (range): East to southwest (clockwise)
Slope range: 4 to 20 percent
Parent material: Mixed eolian sand and/or sandy alluvium
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 3 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Mixed, mesic Xeric Torripsamments

Typical profile
C1—0 to 10 inches; fine sand
C2—10 to 60 inches; fine sand

Minor Components

Kecko soils
Percentage of map unit: 5 percent
Landform: Lava plains

Wapi soils
Percentage of map unit: 3 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 2 percent
Landform: Lava plains

64—Povey-Dollarhide complex, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,200 to 8,600 feet (1,585 to 2,622 meters)
Mean annual precipitation: 16 to 24 inches (406 to 610 millimeters)

Mean annual air temperature: 36 to 41 degrees F (2 to 5 degrees C)
Frost-free period: 30 to 65 days

Map Unit Composition

Povey and similar soils: 55 percent
Dollarhide and similar soils: 25 percent
Dissimilar minor components: 20 percent

Characteristics of Povey

Setting
Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): North
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium over conglomerate, sandstone, siltstone, and/or quartzite
Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Loamy-skeletal, mixed, superactive Pachic Haplocryolls

Typical profile
A—0 to 14 inches; gravelly loam
Bw—14 to 35 inches; very gravelly loam
C—35 to 60 inches; extremely cobbly loam
2R—60 to 70 inches; unweathered bedrock

Characteristics of Dollarhide

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): North
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent

Parent material: Colluvium over siltstone, conglomerate, sandstone, and/or quartzite
Vegetation: Idaho fescue, hotsprings sagebrush

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical profile
A—0 to 7 inches; very gravelly silt loam
Bw—7 to 13 inches; very gravelly loam
2R—13 to 23 inches; unweathered bedrock

Minor Components

Rock outcrop
Percentage of map unit: 10 percent
Landform: Mountain slopes

Blackspar soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Vitale soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

65—Quincy-Walco complex, 2 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 3,200 to 4,500 feet (975 to 1,372 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)
Frost-free period: 100 to 120 days

Map Unit Composition

Quincy and similar soils: 50 percent
Walco and similar soils: 35 percent
Dissimilar minor components: 15 percent

Characteristics of Quincy

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 4 percent
Parent material: Mixed eolian sand and/or sandy alluvium
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 3 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4s
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Mixed, mesic Xeric Torripsamments

Typical profile
C1—0 to 24 inches; fine sand
C2—24 to 69 inches; loamy fine sand

Characteristics of Walco

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 4 to 12 percent
Parent material: Eolian deposits over basalt
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Excessively drained
Flooding frequency: None

Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Mixed, mesic Xeric Torripsamments

Typical profile
C1—0 to 13 inches; fine sand
C2—13 to 21 inches; loamy fine sand
2R—21 to 31 inches; unweathered bedrock

Minor Components

Jestrick soils
Percentage of map unit: 5 percent
Landform: Lava plains

Rekima soils
Percentage of map unit: 5 percent
Landform: Lava plains

Wako soils
Percentage of map unit: 5 percent
Landform: Lava plains

Note: More information about the Jestrick and Wako soils is in the soil survey of Wood River Area, Idaho, Gooding County and Parts of Blaine, Lincoln, and Minidoka Counties.

66—Rehfield loamy sand, 1 to 6 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,400 to 4,800 feet (1,341 to 1,463 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 90 to 110 days

Map Unit Composition

Rehfield and similar soils: 75 percent
Dissimilar minor components: 25 percent

Characteristics of Rehfield

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 1 to 6 percent
Parent material: Mixed alluvium and/or eolian deposits
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification

Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Ultic Argixerolls

Typical profile
A—0 to 12 inches; loamy sand
Bt—12 to 40 inches; sandy clay loam
2C—40 to 61 inches; loamy sand

Minor Components

Cox soils
Percentage of map unit: 10 percent
Landform: Lava plains

Pagari soils
Percentage of map unit: 10 percent
Landform: Lava plains

Rock outcrop
Percentage of map unit: 5 percent
Landform: Lava plains

67—Rock outcrop-Tenno, very stony complex, 0 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,600 to 5,200 feet (1,402 to 1,585 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Rock outcrop: 60 percent
Tenno, very stony surface, and similar soils: 25 percent
Dissimilar minor components: 15 percent

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Characteristics of Tenno, Very Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 0 to 20 percent
Parent material: Loess over basalt
Vegetation: Bluebunch wheatgrass, low sagebrush, Nevada bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 4
Calcium carbonate equivalent: 10 percent
Percentage of surface area covered with stones: 0.1 to 3.0 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.0 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, frigid Lithic Xeric Haplocambids

Typical profile
A—0 to 8 inches; loam
Bw—8 to 14 inches; loam
Bk—14 to 17 inches; stony loam
2R—17 to 27 inches; unweathered bedrock

Minor Components

McCarey soils
Percentage of map unit: 10 percent
Landform: Lava plains

Tenno soils, deep
Percentage of map unit: 5 percent
Landform: Lava plains

68—Rock outcrop-Tenno, very stony complex, 20 to 60 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,600 to 5,140 feet (1,402 to 1,568 meters)

Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Rock outcrop: 60 percent
Tenno, very stony surface, and similar soils: 25 percent
Dissimilar minor components: 15 percent

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Characteristics of Tenno, Very Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): South to west (clockwise)
Slope range: 20 to 60 percent
Parent material: Loess over basalt
Vegetation: Bluebunch wheatgrass, low sagebrush, Nevada bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 4
Calcium carbonate equivalent: 10 percent
Percentage of surface area covered with stones: 0.1 to 3.0 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, frigid Lithic Xeric Haplocambids

Typical profile
A—0 to 8 inches; loam
Bw—8 to 14 inches; loam
Bk—14 to 17 inches; stony loam
2R—17 to 27 inches; unweathered bedrock

Minor Components

McCarey soils
Percentage of map unit: 10 percent
Landform: Lava plains

Tenno soils, deep
Percentage of map unit: 5 percent
Landform: Lava plains

69—Rock outcrop-Trevino, stony-Portino, stony complex, 0 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 5,150 feet (1,280 to 1,570 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Rock outcrop: 50 percent
Trevino, stony surface, and similar soils: 25 percent
Portino, stony surface, and similar soils: 15 percent
Dissimilar minor components: 10 percent

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Characteristics of Trevino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): West
Aspect (range): South to northwest (clockwise)
Slope range: 0 to 20 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, low sagebrush, Nevada bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 10 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Hydric soil status: Not hydric
Hydrologic soil group: D

Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 6 inches; stony loam
Bw—6 to 12 inches; stony loam
Bk—12 to 19 inches; stony loam
2R—19 to 29 inches; unweathered bedrock

Characteristics of Portino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): West
Aspect (range): South to northwest (clockwise)
Slope range: 0 to 20 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; cobbly loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Minor Components

Portneuf soils, bedrock substratum
Percentage of map unit: 5 percent
Landform: Lava plains

Tenno soils, deep
Percentage of map unit: 5 percent
Landform: Lava plains

70—Roundknoll gravelly ashy loamy sand, 2 to 20 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,820 to 5,700 feet (1,468 to 1,736 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Roundknoll and similar soils: 80 percent
Dissimilar minor components: 20 percent

Characteristics of Roundknoll

Setting
Landform: Volcanic cones
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 20 percent
Parent material: Volcanic ash and/or cinders
Vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needle and thread, phlox, serviceberry

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 18 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Ashy-skeletal, glassy, frigid Typic Vitrixerands

Typical profile
A1—0 to 3 inches; gravelly ashy loamy sand
A2—3 to 10 inches; gravelly ashy loamy sand
Bw—10 to 15 inches; extremely gravelly ashy loamy sand
Bk1—15 to 20 inches; very gravelly ashy loamy sand
Bk2—20 to 30 inches; extremely gravelly ashy loamy sand
Bk3—30 to 60 inches; extremely gravelly ashy sand

Minor Components

Cinder land
Percentage of map unit: 10 percent
Landform: Volcanic cones

Roundknoll soils, moderately deep
Percentage of map unit: 10 percent
Landform: Volcanic cones

71—Soen clay loam, 0 to 4 percent slopes

Landscape: Plains
Major land resource area: 12—Lost River Valleys and Mountains
Elevation: 4,480 to 5,680 feet (1,366 to 1,730 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 39 to 43 degrees F (4 to 6 degrees C)
Frost-free period: 70 to 90 days

Map Unit Composition

Soen and similar soils: 80 percent
Dissimilar minor components: 20 percent

Characteristics of Soen

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 4 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: High (linear extensibility percentage about 7.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 3c
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine, smectitic, frigid Calcic Argixerolls

Typical profile
A—0 to 7 inches; clay loam
Bt—7 to 22 inches; silty clay loam
Bk—22 to 60 inches; silt loam

Minor Components

Soelberg soils
Percentage of map unit: 10 percent
Landform: Fan remnants

Techick soils
Percentage of map unit: 10 percent
Landform: Fan remnants

72—Splittop-Atomic complex, 2 to 8 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,600 to 5,400 feet (1,402 to 1,646 meters)
Mean annual precipitation: 11 to 13 inches (279 to 330 millimeters)
Mean annual air temperature: 43 to 46 degrees F (6 to 8 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Splittop and similar soils: 50 percent
Atomic and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of Splittop

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 18 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.7 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 3 inches; loam
Bk1—3 to 26 inches; silt loam
Bk2—26 to 32 inches; loam
2R—32 to 42 inches; unweathered bedrock

Characteristics of Atomic

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 9
Calcium carbonate equivalent: 28 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 8.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 15 inches; loam
Bk1—15 to 34 inches; loam
Bk2—34 to 46 inches; cobbly loam
2R—46 to 56 inches; unweathered bedrock

Minor Components

Playas
Percentage of map unit: 10 percent
Landform: Lava plains

Splittop soils, shallow
Percentage of map unit: 10 percent
Landform: Lava plains

73—Starbuck-Lava flows complex, 2 to 20 percent slopes

Landscape: Plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 4,000 to 4,600 feet (1,219 to 1,402 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 90 to 120 days

Map Unit Composition

Starbuck and similar soils: 50 percent
Lava flows: 30 percent
Dissimilar minor components: 20 percent

Characteristics of Starbuck

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 3 inches; very cobbly silt loam
Bw—3 to 12 inches; silt loam
2R—12 to 22 inches; unweathered bedrock

Characteristics of Lava Flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

Minor Components

Kecko soils
Percentage of map unit: 10 percent
Landform: Lava plains

Starbuck soils, very shallow
Percentage of map unit: 5 percent
Landform: Lava plains

Vining soils
Percentage of map unit: 5 percent
Landform: Lava plains

74—Starbuck-McPan-Rock outcrop complex, 2 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,000 to 4,600 feet (1,219 to 1,402 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 90 to 120 days

Map Unit Composition

Starbuck and similar soils: 40 percent
McPan and similar soils: 30 percent
Rock outcrop: 20 percent
Dissimilar minor components: 10 percent

Characteristics of Starbuck

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): Southwest
Aspect (range): South to west (clockwise)
Slope range: 2 to 20 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush

Properties and qualities
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 3 inches; silt loam
Bw1—3 to 10 inches; silt loam
Bw2—10 to 14 inches; silt loam
2R—14 to 24 inches; unweathered bedrock

Characteristics of McPan

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 10 percent
Parent material: Silty alluvium and/or loess over volcanic rock
Vegetation: Thurber needlegrass, Wyoming big sagebrush, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: 20 to 39 inches to an indurated duripan and 21 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 25 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-silty, mixed, superactive, mesic Xeric Argidurids

Typical profile
A—0 to 6 inches; silt loam
Btk—6 to 20 inches; silty clay loam
Bkq—20 to 27 inches; cobbly loam
Bkqm—27 to 29 inches; cemented material
2R—29 to 39 inches; unweathered bedrock

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

Chijer soils
Percentage of map unit: 5 percent
Landform: Buttes

Paulville soils
Percentage of map unit: 5 percent
Landform: Buttes

75—Sunsetcone gravelly medial loam, 30 to 60 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,840 to 6,200 feet (1,780 to 1,890 meters)
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 50 to 70 days

Map Unit Composition

Sunsetcone and similar soils: 85 percent
Dissimilar minor components: 15 percent

Characteristics of Sunsetcone

Setting
Landform: Volcanic cones
Down-slope shape: Concave
Across-slope shape: Linear
Aspect (representative): North
Aspect (range): Northwest to north (clockwise)
Slope range: 30 to 60 percent
Parent material: Tephra
Vegetation: Rocky Mountain Douglas-fir, mountain snowberry (fig. 16)

Properties and qualities
Depth to restrictive feature: 14 to 40 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)
Hydric soil status: Not hydric
Hydrologic soil group: A

Figure 16.—Typical vegetation in an area of Sunsetcone gravelly medial loam, 30 to 60 percent slopes. The overstory is Douglas-fir. The ecological site is MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID).

Taxonomic classification: Medial over pumiceous or cindery, amorphic over glassy Humic Xeric Vitricryands

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A1—2 to 6 inches; gravelly medial loam
A2—6 to 8 inches; gravelly medial loam
AB—8 to 12 inches; very gravelly medial loam
Bw—12 to 26 inches; very gravelly medial sandy loam
2C1—26 to 32 inches; cinders
2C2—32 to 60 inches; cinders

Minor Components

Hal soils
Percentage of map unit: 10 percent
Landform: Hillslopes

Grassycone soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

76—Sunsetcone-Grassycone complex, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills

Elevation: 5,970 to 7,120 feet (1,820 to 2,171 meters)
Mean annual precipitation: 16 to 20 inches (406 to 508 millimeters)
Mean annual air temperature: 37 to 43 degrees F (3 to 6 degrees C)
Frost-free period: 40 to 65 days

Map Unit Composition

Sunsetcone and similar soils: 50 percent
Grassycone and similar soils: 40 percent
Dissimilar minor component: 10 percent

Characteristics of Sunsetcone

Setting
Landform: Volcanic cones
Down-slope shape: Concave
Across-slope shape: Concave
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Tephra
Vegetation: Rocky Mountain Douglas-fir, mountain snowberry

Properties and qualities
Depth to restrictive feature: 14 to 40 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Medial over pumiceous or cindery, amorphic over glassy Humic Xeric Vitricryands

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A1—2 to 6 inches; gravelly medial loam
A2—6 to 8 inches; gravelly medial loam
AB—8 to 12 inches; very gravelly medial loam
Bw—12 to 26 inches; very gravelly medial sandy loam
2C1—26 to 32 inches; cinders
2C2—32 to 60 inches; cinders

Characteristics of Grassycone

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Toeslopes
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Aspect (representative): Northeast
Aspect (range): Northwest to east (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium derived from volcanic ash and cinders with an influence of loess
Vegetation: Pinegrass, mountain brome, quaking aspen

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very high (about 14.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: QUAKING ASPEN 20+ POTR5 (R010AY016ID)
Hydric soil status: Not hydric
Hydrologic soil group: A
Taxonomic classification: Medial, amorphic Humic Xeric Vitricryands

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; medial fine sandy loam
A2—3 to 9 inches; gravelly medial fine sandy loam
Bw—9 to 57 inches; gravelly medial fine sandy loam
2C—57 to 65 inches; very cobbly loam

Minor Component

Hal soils
Percentage of map unit: 10 percent
Landform: Hillslopes

77—Taunton-Paulville complex, 2 to 15 percent slopes

Landscape: Lava plains
Major land resource area: 11—Snake River Plains
Elevation: 4,000 to 4,600 feet (1,219 to 1,402 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 95 to 120 days

Map Unit Composition

Taunton and similar soils: 50 percent
Paulville and similar soils: 30 percent
Dissimilar minor components: 20 percent

Characteristics of Taunton

Setting
Landform: Buttes
Down-slope shape: Convex, linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to an indurated duripan and 40 to 80 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Xeric Haplodurids

Typical profile
A—0 to 5 inches; silt loam
Bk—5 to 32 inches; loam
Bkqm—32 to 44 inches; cemented material
2R—44 to 54 inches; unweathered bedrock

Characteristics of Paulville

Setting
Landform: Buttes
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 6 percent
Parent material: Mixed alluvium, lacustrine deposits, and/or loess
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Very slightly saline (about 3 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 10.9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Xeric Calciargids

Typical profile
A—0 to 6 inches; loam
Bt—6 to 30 inches; clay loam
Bk—30 to 50 inches; silt loam
2C—50 to 64 inches; loamy fine sand

Minor Components

Chijer soils
Percentage of map unit: 10 percent
Landform: Buttes

Rock outcrop
Percentage of map unit: 10 percent
Landform: Buttes

78—Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes

Landscape: Valleys
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,000 to 5,690 feet (1,524 to 1,734 meters)
Mean annual precipitation: 11 to 13 inches (279 to 330 millimeters)
Mean annual air temperature: 39 to 43 degrees F (4 to 6 degrees C)
Frost-free period: 65 to 90 days

Map Unit Composition

Techick and similar soils: 40 percent
Soelberg and similar soils: 35 percent
Lesbut and similar soils: 15 percent
Dissimilar minor component: 10 percent

Characteristics of Techick

Setting
Landform: Fan remnants
Down-slope shape: Linear

Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 4 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 40 to 50 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 1
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4c
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls

Typical profile
A—0 to 4 inches; loam
Bt—4 to 12 inches; clay loam
Btk—12 to 25 inches; clay loam
Bk—25 to 46 inches; loam
2Bq—46 to 60 inches; extremely gravelly sand

Characteristics of Soelberg

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 4 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, phlox

Properties and qualities
Depth to restrictive feature: 30 to 40 inches to strongly contrasting textural stratification
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained

Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6c
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Calciargidic Argixerolls

Typical profile
A—0 to 10 inches; loam
Bt—10 to 28 inches; clay loam
Bk—28 to 36 inches; gravelly loam
2Bkq—36 to 40 inches; extremely gravelly loamy coarse sand
2Bq—40 to 60 inches; extremely gravelly sand

Characteristics of Lesbut

Setting
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 4 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, phlox

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: 3 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Somewhat excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Sandy-skeletal, mixed, frigid Calcidic Haploxerolls

Typical profile
A—0 to 3 inches; gravelly loam
Bw1—3 to 13 inches; gravelly loam

Bw2—13 to 19 inches; very gravelly sandy loam
2Bkq—19 to 60 inches; extremely gravelly loamy sand

Minor Component

Soelberg soils, moderately deep
Percentage of map unit: 10 percent
Landform: Fan remnants

79—Techicknot-Atom-Nargon complex, 0 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,800 to 5,800 feet (1,463 to 1,768 meters)
Mean annual precipitation: 9 to 12 inches (229 to 305 millimeters)
Mean annual air temperature: 43 to 45 degrees F (6 to 7 degrees C)
Frost-free period: 70 to 100 days

Map Unit Composition

Techicknot and similar soils: 45 percent
Atom and similar soils: 25 percent
Nargon and similar soils: 20 percent
Dissimilar minor components: 10 percent

Characteristics of Techicknot

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 11.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 4e
Ecological site: LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Hydric soil status: Not hydric
Hydrologic soil group: C

Taxonomic classification: Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls

Typical profile
A—0 to 4 inches; loam
Bt—4 to 29 inches; clay loam
Bk1—29 to 48 inches; loam
Bk2—48 to 60 inches; silt loam

Characteristics of Atom

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Mixed alluvium
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Moderately saline (about 12 millimhos per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 22
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 7.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, frigid Sodic Xeric Haplocalcids

Typical profile
A1—0 to 3 inches; silt loam
A2—3 to 10 inches; silty clay loam
Bk—10 to 60 inches; silt loam

Characteristics of Nargon

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Mixed alluvium over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 1
Calcium carbonate equivalent: 23 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 4.2 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical profile
A—0 to 5 inches; loam
Bk—5 to 15 inches; clay loam
Bkq—15 to 22 inches; stony loam
2R—22 to 32 inches; unweathered bedrock

Minor Components

Beartrap soils
Percentage of map unit: 5 percent
Landform: Lava plains

Coffee soils
Percentage of map unit: 2 percent
Landform: Lava plains

Note: More information about the Coffee soils is in the soil survey of Butte County Area, Idaho, Parts of Butte and Bingham Counties.

Deuce soils
Percentage of map unit: 1 percent
Landform: Volcanic cones

Rock outcrop
Percentage of map unit: 1 percent
Landform: Lava plains

Splittop soils
Percentage of map unit: 1 percent
Landform: Lava plains

80—Treemold-Silentcone-Lava flows complex, 2 to 15 percent slopes

Landscape: Lava plains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,660 to 5,830 feet (1,725 to 1,776 meters)

Mean annual precipitation: 14 to 18 inches (356 to 457 millimeters)
Mean annual air temperature: 39 to 45 degrees F (4 to 7 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Treemold and similar soils: 45 percent
Silentcone and similar soils: 35 percent
Lava flows: 20 percent

Characteristics of Treemold

Setting
Landform: Lava fields
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Volcanic ash and/or cinders over basalt
Vegetation: Sandberg bluegrass, low sagebrush

Properties and qualities
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 2)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Somewhat excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.9 inch)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: Very Shallow Loam 12-16 ARAR8/POSE (R010AY050ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Ashy-skeletal, glassy, frigid Lithic Vitrixerands

Typical profile
A—0 to 2 inches; very gravelly ashy loam
Bw—2 to 9 inches; very gravelly ashy sandy loam
2R—9 to 60 inches; unweathered bedrock

Characteristics of Silentcone

Setting
Landform: Lava fields
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 15 percent
Parent material: Volcanic ash and/or cinders over basalt
Vegetation: Antelope bitterbrush, bluebunch wheatgrass, mountain big sagebrush, needle and thread, phlox, serviceberry

Properties and qualities
Depth to restrictive feature: 20 to 30 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 2)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Somewhat excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.5 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6s
Ecological site: SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Ashy-skeletal, glassy, frigid Humic Vitrixerands

Typical profile
A1—0 to 4 inches; very gravelly ashy loam
A2—4 to 10 inches; very gravelly ashy loam
Bw—10 to 24 inches; very gravelly ashy loam
2R—24 to 48 inches; unweathered bedrock

Characteristics of Lava flows

Description of areas: Relatively recent outpourings of lava with little or no vegetation

81—Trevino, stony-Portino, stony-Rock outcrop complex, 0 to 20 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 5,110 feet (1,280 to 1,558 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Trevino, stony surface, and similar soils: 40 percent
Portino, stony surface, and similar soils: 30 percent
Rock outcrop: 20 percent
Dissimilar minor component: 10 percent

Characteristics of Trevino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): West
Aspect (range): South to northwest (clockwise)
Slope range: 0 to 20 percent

Parent material: Mixed alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, low sagebrush, Nevada bluegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 10 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Low (about 3.4 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical profile
A—0 to 6 inches; stony loam
Bw—6 to 12 inches; stony loam
Bk—12 to 19 inches; stony loam
2R—19 to 29 inches; unweathered bedrock

Characteristics of Portino, Stony Surface

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (representative): West
Aspect (range): South to northwest (clockwise)
Slope range: 0 to 20 percent
Parent material: Silty alluvium and/or loess over basalt
Vegetation: Bluebunch wheatgrass, Wyoming big sagebrush, Sandberg bluegrass, Thurber needlegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 8
Calcium carbonate equivalent: 23 percent
Percentage of surface area covered with stones: 0.01 to 0.1 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None

Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Moderate (about 6.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Hydric soil status: Not hydric
Hydrologic soil group: C
Taxonomic classification: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 12 inches; cobbly loam
Bk—12 to 34 inches; silt loam
2R—34 to 44 inches; unweathered bedrock

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Component

Portneuf soils
Percentage of map unit: 10 percent
Landform: Lava plains

82—Vining-Kecko-Rock outcrop complex, 2 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 2,800 to 4,700 feet (853 to 1,433 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 46 to 50 degrees F (8 to 10 degrees C)
Frost-free period: 95 to 120 days

Map Unit Composition

Vining and similar soils: 35 percent
Kecko and similar soils: 30 percent
Rock outcrop: 20 percent
Dissimilar minor components: 15 percent

Characteristics of Vining

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 12 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.6 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids

Typical profile
A—0 to 6 inches; fine sandy loam
Bw—6 to 20 inches; fine sandy loam
C—20 to 24 inches; sandy loam
2R—24 to 34 inches; unweathered bedrock

Characteristics of Kecko

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 2 to 8 percent
Parent material: Mixed alluvium and/or eolian deposits
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: None within a depth of 60 inches
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Nonsaline (about 1 millimho per centimeter)
Sodicity (maximum): Sodium adsorption ratio about 3
Calcium carbonate equivalent: 20 percent

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): High (about 9 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Xeric Haplocalcids

Typical profile
A—0 to 5 inches; loamy fine sand
Bw—5 to 30 inches; fine sandy loam
Bk—30 to 60 inches; fine sandy loam

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

Quincy soils
Percentage of map unit: 5 percent
Landform: Lava plains

Starbuck soils
Percentage of map unit: 5 percent
Landform: Lava plains

Walco soils
Percentage of map unit: 5 percent
Landform: Lava plains

83—Vining-Wapi-Rock outcrop complex, 0 to 12 percent slopes

Landscape: Plains
Major land resource area: 11—Snake River Plains
Elevation: 4,200 to 5,070 feet (1,280 to 1,544 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Vining and similar soils: 40 percent
Wapi and similar soils: 20 percent
Rock outcrop: 20 percent
Dissimilar minor components: 20 percent

Characteristics of Vining

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Mixed alluvium and/or eolian deposits over basalt
Vegetation: Bluebunch wheatgrass, basin big sagebrush, Sandberg bluegrass

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None

Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.8 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: B
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids

Typical profile
A—0 to 5 inches; fine sandy loam
Bw—5 to 25 inches; fine sandy loam
2R—25 to 35 inches; unweathered bedrock

Characteristics of Wapi

Setting
Landform: Lava plains
Down-slope shape: Linear
Across-slope shape: Linear
Aspect (range): All aspects
Slope range: 0 to 12 percent
Parent material: Eolian sand over basalt
Vegetation: Basin big sagebrush, needle and thread, Indian ricegrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): High
Natural drainage class: Excessively drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 1.3 inches)

Interpretive groups
Land capability subclass (nonirrigated): 7s
Ecological site: SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Mixed, mesic Lithic Xeropsamments

Typical profile
A—0 to 5 inches; loamy fine sand
C—5 to 19 inches; loamy fine sand
2R—19 to 29 inches; unweathered bedrock

Characteristics of Rock Outcrop

Description of areas: Exposures of bare bedrock

Minor Components

Kecko soils
Percentage of map unit: 10 percent
Landform: Lava plains

Portneuf soils
Percentage of map unit: 5 percent
Landform: Lava plains

Quincy soils
Percentage of map unit: 5 percent
Landform: Lava plains

84—Vitale-Blackspar complex, 30 to 60 percent slopes

Landscape: Mountains
Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Elevation: 5,000 to 8,000 feet (1,524 to 2,438 meters)
Mean annual precipitation: 12 to 16 inches (305 to 406 millimeters)
Mean annual air temperature: 39 to 43 degrees F (4 to 6 degrees C)
Frost-free period: 60 to 90 days

Map Unit Composition

Vitale and similar soils: 45 percent
Blackspar and similar soils: 35 percent
Dissimilar minor components: 20 percent

Characteristics of Vitale

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 30 to 60 percent
Parent material: Tephra and/or colluvium over sandstone, conglomerate, and/or siltstone
Vegetation: Bluebunch wheatgrass, mountain big sagebrush

Properties and qualities
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (linear extensibility percentage about 4.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 2.1 inches)

Interpretive groups
Land capability subclass (nonirrigated): 6e
Ecological site: SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical profile
A1—0 to 3 inches; very cobbly loam
A2—3 to 10 inches; very cobbly loam
Bt1—10 to 19 inches; very cobbly clay loam
Bt2—19 to 24 inches; very cobbly clay loam
Bt3—24 to 33 inches; very cobbly loam
R—33 to 43 inches; unweathered bedrock

Characteristics of Blackspar

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslopes, footslopes
Down-slope shape: Convex
Across-slope shape: Convex
Aspect (representative): Southwest
Aspect (range): Southeast to west (clockwise)
Slope range: 30 to 60 percent
Parent material: Colluvium over siltstone, sandstone, and/or conglomerate
Vegetation: Low sagebrush, Sandberg bluegrass, bluebunch wheatgrass

Properties and qualities
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Shrink-swell potential: Low (linear extensibility percentage about 1.5)
Salinity (maximum): Not saline
Sodicity (maximum): Not sodic
Calcium carbonate equivalent: No carbonates

Hydrologic properties
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Natural drainage class: Well drained
Flooding frequency: None
Ponding frequency: None
Depth to seasonal high water table: Not present within a depth of 72 inches
Available water capacity (entire profile): Very low (about 0.6 inch)

Interpretive groups
Land capability subclass (nonirrigated): 7e
Ecological site: SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)
Hydric soil status: Not hydric
Hydrologic soil group: D
Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Lithic Mollic Haploxeralfs

Typical profile
A1—0 to 2 inches; very cobbly loam
A2—2 to 6 inches; very cobbly loam
Bt—6 to 12 inches; extremely cobbly loam
R—12 to 22 inches; unweathered bedrock

Minor Components

Rock outcrop
Percentage of map unit: 10 percent
Landform: Mountain slopes

Drage soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

Povey soils
Percentage of map unit: 5 percent
Landform: Mountain slopes

85—Water

Major land resource area: 10—Central Rocky and Blue Mountain Foothills
Description of areas: Small perennial freshwater ponds

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils as rangeland and forestland, as sites for buildings and sanitary facilities, and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a management plan in harmony with the natural soil.

Maintenance staff can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” under the heading “Interpretive groups” and in table 5.

Prime Farmland

The map units in the survey area that are considered prime farmland are listed at the end of this section. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of prime farmland, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

For some soils, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

The map units that meet the requirements for prime farmland if irrigated are:

1 Bancroft silt loam, 1 to 4 percent slopes
6 Carey Lake loam, 0 to 2 percent slopes
13 Drage gravelly loam, cool, 2 to 15 percent slopes
14 Drage very gravelly loam, cool, 0 to 3 percent slopes
17 Goodalfs-Craters association, 0 to 5 percent slopes
23 Infernocone gravelly ashy sandy loam, 2 to 20 percent slopes
25 Justesen loam, 2 to 4 percent slopes
26 Justesen loam, 4 to 8 percent slopes
37 McCarey-Beartrap complex, 1 to 6 percent slopes
40 McCarey-Justesen complex, 2 to 8 percent slopes
41 McCarey-Molyneux complex, 2 to 8 percent slopes
47 McPan-Chijer complex, 1 to 6 percent slopes (if reclaimed of excess salts and sodium)
48 Molyneux loam, 2 to 4 percent slopes
55 Portino silt loam, 2 to 4 percent slopes

57 Portino cobbly loam, 2 to 4 percent slopes, stony
60 Portneuf silt loam, bedrock substratum, 0 to 2 percent slopes (if reclaimed of excess salts and sodium)
61 Portneuf silt loam, bedrock substratum, 2 to 4 percent slopes (if reclaimed of excess salts and sodium)
66 Rehfield loamy sand, 1 to 6 percent slopes
70 Roundknoll gravelly ashy loamy sand, 2 to 20 percent slopes
71 Soen clay loam, 0 to 4 percent slopes
78 Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes

Rangeland

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Table 6 shows, for each soil that supports vegetation, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are available at http://esis.sc.egov.usda.gov/.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation (the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil) is listed by common name. Under *rangeland composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Tables 7 and 8 provide a consolidated list of the plants shown in table 6. These tables give the scientific name, symbol, and local common name of each plant. The plants are sorted by symbol in table 7 and by local common name in table 8. Table 9 gives the ecological site name, type, and number for each soil in the survey area.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity

index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in the "National Range and Pasture Handbook," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Land Management

In tables 10 through 13, interpretive ratings are given for various aspects of land management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified land management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified land management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

Rating class terms for hazard of erosion are expressed as *slight, moderate, severe,* and *very severe*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for erosion is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils.

Table 10.—Planting and Harvesting

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to

these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 11.—Hazard of Erosion and Suitability for Roads

Ratings in the column *hazard of erosion* are based on slope and on soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erosion factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 12.—Site Preparation

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Table 13.—Site Restoration

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water

capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreational Development

In tables 14 and 15, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in these tables can be supplemented by other information in this survey, for example, interpretations for sewage disposal, construction materials, and water management.

Table 14.—Camps and Picnic Areas

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (Ksat), and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (Ksat), and toxic substances in the soil.

Table 15.—Trail Management

Foot traffic and equestrian trails should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Mountain bike and off-road vehicle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Hydric Soils

Table 16 lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite

determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 inches per hour in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 inches per hour in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, saturated hydraulic conductivity (Ksat), corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 17 and 18 show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 17.—Dwellings and Small Commercial Buildings

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost

penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Table 18.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a

water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 19 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and

the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Construction Materials

Tables 20 and 21 give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Table 20.—Potential Source of Gravel, Sand, and Topsoil

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the likelihood of finding material in suitable quantity is evaluated in the table. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

The rating class terms for source of topsoil are *good, fair,* and *poor*. The features that limit the soils as a source of topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils. The lower the number, the greater the limitation. A rating of good indicates a numerical rating of greater than 0.99.

Table 21.—Potential Source of Reclamation Material and Roadfill

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties

include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

The rating class terms in the table are *good, fair,* and *poor*. The features that limit the soils as sources of reclamation material and roadfill are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils. The lower the number, the greater the limitation. A rating of good indicates a numerical rating of greater than 0.99.

Water Management

Table 22 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Table 23 gives general information about the soils in the survey area. The percent composition of the map unit is given for the major components in each map unit. The percentage of the minor components is not given in the table. The section “Detailed Soil Map Units” gives the percentage of both the major and minor components. Slope range, elevation, mean annual precipitation, landscape position, landform, parent material, and ecological site name and number are given for each soil component.

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Soil Properties

Table 24 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1

through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical Soil Properties

Table 25 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller. A representative value is given for sand and silt. A range in value is given for clay.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a range in the percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than

2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosive Soil Properties

Table 26 shows estimates of the erosion factors and wind erodibility of the soils in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Erosion factors are shown as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Soil Properties

Table 27 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity (CEC) is the total amount of exchangeable cations that can be held by the soil, expressed in terms of centimoles per kilogram. It commonly is measured at neutral pH of 7.0 (CEC-7), but it may be measured at some other stated pH value. Soils that have a low CEC hold fewer cations and may require more frequent applications of fertilizer than those that have a high CEC. The ability to retain cations minimizes the risk of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 28 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual

weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 29 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2006). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeroll (*Zer*, meaning dry, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Palexerolls (*Pale*, meaning excessive development, plus *xeroll*, the suborder of the Mollisols that has a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Palexerolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, superactive, frigid Typic Palexerolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Table 30 indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993) and in the "Field Book for Describing and Sampling Soils" (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2006). Following the pedon description is the range of important characteristics of the soils in the series.

Atom Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium
Slope range: 2 to 20 percent
Elevation: 4,500 to 5,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Coarse-silty, mixed, superactive, frigid Sodic Xeric Haplocalcids

Typical Pedon

Atom silt loam in an area of Nargon-Atom-Techicknot complex, 0 to 20 percent slopes; about 0.5 mile northeast of Middle Butte and 4 miles northwest of Atomic City, Idaho; about 2,400 feet north and 700 feet east of the southwest corner of section 16, T. 2 N., R. 32 E.; latitude 43 degrees 29 minutes 57.6 seconds north and longitude 112 degrees 42 minutes 58.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; moderate very thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many fine vesicular pores; 2 percent gravel; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

A2—3 to 10 inches; pale brown (10YR 6/3) silty clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and moderately plastic; common fine and very fine roots; common very fine tubular pores; 1 percent gravel; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bkq—10 to 29 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine irregular pores; 35 percent carbonate coatings on bottom surface of rock fragments and 35 percent silica coatings on bottom surface of rock fragments; 10 percent coarse spherical carbonate nodules; 1 percent gravel; violently effervescent; strongly alkaline (pH 8.5); clear wavy boundary.

Bk1—29 to 39 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 35 percent carbonate coatings on bottom

surface of rock fragments; 1 percent gravel; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bk2—39 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments; 5 percent gravel; violently effervescent; strongly alkaline (pH 8.5).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 7 to 12 inches

A1 horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam
- Content of clay—18 to 27 percent
- Content of rock fragments—0 to 5 percent gravel
- Calcium carbonate equivalent—0 to 10 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.4 to 8.4

A2 horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silt loam, loam, silty clay loam
- Content of clay—18 to 35 percent
- Content of rock fragments—0 to 5 percent gravel
- Calcium carbonate equivalent—15 to 40 percent
- Sodium adsorption ratio—13 to 30
- Electrical conductivity (millimhos per centimeter)—4 to 8
- Reaction—pH 7.9 to 10.0

Bk horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silt loam, loam, silty clay loam
- Content of clay—25 to 35 percent
- Content of rock fragments—0 to 5 percent gravel
- Calcium carbonate equivalent—15 to 40 percent
- Sodium adsorption ratio—13 to 30
- Electrical conductivity (millimhos per centimeter)—8 to 16
- Reaction—pH 8.5 to 10.0

Atomic Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and loess over bedrock derived from basalt
Slope range: 2 to 8 percent
Elevation: 4,600 to 5,400 feet
Mean annual precipitation: 11 to 13 inches

Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical Pedon

Atomic loam in an area of Splittop-Atomic complex, 2 to 8 percent slopes; about 4 miles south and 5 miles east of Antelope Lake; about 2,000 feet north and 1,000 feet east of the southwest corner of section 2, T. 3 S., R. 29 E.; latitude 43 degrees 11 minutes 19 seconds north and longitude 113 degrees 2 minutes 36.2 seconds west. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; many very fine irregular pores; 5 percent carbonate finely disseminated throughout; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2—3 to 15 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; common very fine and fine tubular pores; 10 percent carbonate finely disseminated throughout; slightly effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Bk1—15 to 34 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; strong medium and coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and fine tubular pores; 25 percent carbonate finely disseminated throughout; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk2—34 to 46 inches; light yellowish brown (10YR 6/4) cobbly loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and fine tubular pores; 25 percent carbonate finely disseminated throughout; 20 percent cobbles and 5 percent gravel; violently effervescent; 10 percent gravel-sized, carbonate-cemented nodules; moderately alkaline (pH 8.4); abrupt smooth boundary.

2R—46 to 60 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Depth to calcic horizon: 10 to 15 inches

A horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—18 to 27 percent
Content of rock fragments—0 to 3 percent gravel
Calcium carbonate equivalent—5 to 15 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bk1 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—18 to 27 percent
Content of rock fragments—0 to 15 percent gravel and 0 to 6 percent cobbles
Calcium carbonate equivalent—6 to 40 percent
Sodium adsorption ratio—5 to 13

Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 9.0

Bk2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—18 to 27 percent
Content of rock fragments—5 to 22 percent gravel and 11 to 20 percent cobbles
Calcium carbonate equivalent—16 to 40 percent
Sodium adsorption ratio—5 to 13
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 8.0 to 9.0

Bancroft Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Silty alluvium and loess
Slope range: 1 to 8 percent
Elevation: 4,800 to 5,200 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 65 to 90 days

Taxonomic class: Fine-silty, mixed, superactive, frigid Calcic Argixerolls

Typical Pedon

Bancroft silt loam, 1 to 4 percent slopes; about 3 miles southwest of Craters of the Moon National Monument Headquarters; about 2,300 feet east and 2,400 feet north of the southwest corner of section 19, T. 1 S., R. 23 E.; latitude 43 degrees 19 minutes 22.9 seconds north and longitude 113 degrees 46 minutes 7.1 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and few medium roots; many very fine interstitial pores; neutral (pH 6.8); abrupt smooth boundary.

AB—6 to 12 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine and common medium tubular pores; neutral (pH 7.0); clear smooth boundary.

Bt1—12 to 15 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; many fine and medium tubular pores; 15 percent discontinuous clay films on all faces of peds; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2—15 to 26 inches; pale brown (10YR 6/3) silty clay loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; many fine and medium tubular pores; 15 percent discontinuous

clay films on all faces of peds and 15 percent discontinuous clay films on surfaces along pores; neutral (pH 7.2); abrupt wavy boundary.

Bk1—26 to 48 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few fine roots; many fine and medium tubular pores; violently effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

Bk2—48 to 60 inches; very pale brown (10YR 8/3) silt loam, pale brown (10YR 6/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; many fine and medium tubular pores; violently effervescent; strongly alkaline (pH 8.8).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 12 to 17 inches
Depth to calcic horizon: 20 to 30 inches

A horizon:
Organic matter content—2 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—15 to 20 percent
Reaction—pH 6.1 to 7.3

AB horizon:
Organic matter content—2 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—15 to 20 percent
Reaction—pH 6.1 to 7.3

Bt1 horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, silty clay loam
Content of clay—18 to 32 percent
Reaction—pH 6.1 to 7.6

Bt2 horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, silty clay loam
Content of clay—18 to 32 percent
Reaction—pH 6.1 to 7.6

Bk1 horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, silt loam
Content of clay—18 to 32 percent
Calcium carbonate equivalent—15 to 30 percent
Reaction—pH 7.8 to 9.0

Bk2 horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, silt loam
Content of clay—18 to 32 percent
Calcium carbonate equivalent—15 to 30 percent
Reaction—pH 7.8 to 9.0

2Bk horizon (below a depth of 40 inches where present):
Texture (fraction less than 2 millimeters in diameter)—loam, loamy sand
Content of clay—5 to 18 percent

Content of rock fragments—10 to 31 percent gravel and 0 to 6 percent cobbles
Calcium carbonate equivalent—5 to 25 percent

Beartrap Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and eolian deposits over basalt
Slope range: 2 to 20 percent
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 11 to 16 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 75 to 100 days

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Aridic Calcixerolls

Typical Pedon

Beartrap loam in an area of McCarey-Beartrap complex, 1 to 6 percent slopes; about 4 miles south and 1 mile east of Rattlesnake Butte; about 2,800 feet south and 2,500 feet west of the northeast corner of section 31, T. 2 S., R. 28 E.; latitude 43 degrees 12 minutes 14.7 seconds north and longitude 113 degrees 14 minutes 2.7 seconds west. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 15 percent carbonate finely disseminated throughout; strongly effervescent; slightly alkaline (pH 7.6); abrupt smooth boundary.

A2—2 to 16 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine and medium granular structure; soft, friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine and fine irregular pores; 5 percent carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.

Bk1—16 to 19 inches; light yellowish brown (10YR 6/4) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine and fine tubular pores; 15 percent carbonate finely disseminated throughout; 5 percent cobbles; strongly effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

Bk2—19 to 43 inches; light gray (10YR 7/2) fine sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, firm, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; 30 percent carbonate finely disseminated throughout; 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk3—43 to 52 inches; very pale brown (10YR 8/2) fine sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; 30 percent carbonate finely disseminated throughout; 10 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2R—52 to 60 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 16 inches
Depth to calcic horizon: 10 to 16 inches

A horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—8 to 12 percent
Content of rock fragments—0 to 9 percent gravel and 0 to 6 percent cobbles
Calcium carbonate equivalent—5 to 15 percent
Reaction—pH 7.4 to 7.8

Bk horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, loam, fine sandy loam
Content of clay—12 to 18 percent
Content of rock fragments—0 to 9 percent gravel and 0 to 11 percent cobbles
Calcium carbonate equivalent—15 to 40 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 8.4

Bigcinder Series

Depth class: Shallow to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Volcanic ash and cinders derived from volcanic rock
Slope range: 2 to 50 percent
Elevation: 5,400 to 6,490 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 50 to 70 days

Taxonomic class: Ashy-skeletal over fragmental or cindery, aniso, glassy Humic Xeric Vitricryands

Typical Pedon

Bigcinder ashy sandy loam, 20 to 50 percent slopes; about 1 mile south of the Craters of the Moon National Monument Headquarters; 2,200 feet west and 2,200 feet north of the southeast corner of section 12, T. 1 N., R. 24 E.; latitude 43 degrees 25 minutes 53 seconds north and longitude 113 degrees 32 minutes 33 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; dark yellowish brown (10YR 3/4) ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; common very fine tubular pores; 10 percent gravel-sized cinders; neutral (pH 7.0); clear smooth boundary.
A2—2 to 6 inches; very dark brown (10YR 2/2) very gravelly ashy sandy loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and

nonplastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 40 percent gravel-sized cinders; neutral (pH 7.1); clear smooth boundary.

A3—6 to 10 inches; dark brown (10YR 3/3) very gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 45 percent gravel-sized cinders; neutral (pH 7.1); clear wavy boundary.

2C—10 to 20 inches; black (10YR 2/1) gravel, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; many very fine, fine, and medium and few coarse interstitial pores; 99 percent gravel-sized cinders; neutral (pH 7.0); clear smooth boundary.

3A1—20 to 24 inches; yellowish brown (10YR 5/4) very gravelly ashy loamy sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; common very fine, fine, and medium interstitial pores; 45 percent gravel-sized cinders; neutral (pH 6.9); clear wavy boundary.

3A2—24 to 30 inches; yellowish brown (10YR 5/4) very gravelly ashy loamy sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; common very fine, fine, and medium interstitial pores; 50 percent gravel-sized cinders; neutral (pH 7.0); clear wavy boundary.

4C—30 to 60 inches; black (10YR 2/1) cinders, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, and medium and few coarse interstitial pores; 99 percent gravel-sized cinders; neutral (pH 7.0).

Range in Characteristics

Depth to restrictive feature: 10 to 18 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 15 inches

Thickness of andic soil properties: 14 to 30 inches (combined thickness of the A and 3A horizons

A1 horizon:

Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—2 to 6 percent
Content of rock fragments—35 to 40 percent gravel
Reaction—pH 6.6 to 7.3

A2 horizon:

Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—2 to 6 percent
Content of rock fragments—35 to 40 percent gravel
Reaction—pH 6.6 to 7.3

A3 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—0 to 4 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.6 to 7.3

2C horizon:
Organic matter content—none
Texture—cinders
Content of clay—0 to 1 percent
Content of rock fragments—90 to 100 percent gravel
Reaction—pH 6.6 to 7.3

3A1 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—2 to 6 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.6 to 7.3

3A2 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—0 to 4 percent
Content of rock fragments—35 to 50 percent gravel
Reaction—pH 6.6 to 7.3

4C horizon:
Organic matter content—none
Texture—cinders
Content of clay—0 to 1 percent
Content of rock fragments—90 to 100 percent gravel
Reaction—pH 6.6 to 7.3

Blackspar Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium over siltstone, sandstone, or conglomerate
Slope range: 30 to 75 percent
Elevation: 5,000 to 8,500 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Mollic Haploxeralfs

Typical Pedon

Blackspar very cobbly loam in an area of Vitale-Blackspar complex, 30 to 60 percent slopes; about 16 miles west and 8 miles south of Arco, Idaho; 450 feet south and 800 feet west of the northeast corner of section 17, T. 2 N., R. 24 E.; latitude 43 degrees 30 minutes 33.9 seconds north and longitude 113 degrees 37 minutes 3.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; 25 percent gravel and 25 percent cobbles; neutral (pH 7.0); clear wavy boundary.
A2—2 to 6 inches; pale brown (10YR 6/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly

sticky and slightly plastic; many very fine and fine and common medium roots; common very fine and fine tubular pores; 20 percent gravel and 35 percent cobbles; neutral (pH 7.2); gradual wavy boundary.

Bt—6 to 12 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine irregular pores; 15 percent clay films on all faces of peds and 15 percent clay films on surfaces along pores; 30 percent gravel and 40 percent cobbles; neutral (pH 7.3); abrupt smooth boundary.

R—12 to 22 inches; siltstone.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

A1 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 20 percent
Content of rock fragments—14 to 45 percent gravel and 21 to 37 percent cobbles
Reaction—pH 6.6 to 7.3

A2 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 20 percent
Content of rock fragments—14 to 45 percent gravel and 21 to 37 percent cobbles
Reaction—pH 6.6 to 7.3

Bt horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, clay loam
Content of clay—20 to 30 percent
Content of rock fragments—25 to 48 percent gravel and 20 to 40 percent cobbles
Reaction—pH 6.6 to 7.3

Bringmee Series

Depth class: Deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Mixed alluvium
Slope range: 1 to 4 percent
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Pachic Ultic Argixerolls

Typical Pedon

Bringmee loam in an area of Bringmee-Hutton complex, 1 to 4 percent slopes; about 3.5 miles north and 4 miles east of Carey, Idaho; about 2,500 feet west and 600 feet south of the northeast corner of section 5, T. 1 S., R. 22 E.; latitude 43 degrees 21 minutes 59 seconds north and longitude 113 degrees 51 minutes 58.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine tubular pores; slightly acid (pH 6.2); clear smooth boundary.

BA—7 to 15 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; slightly acid (pH 6.4); clear smooth boundary.

Bt1—15 to 26 inches; dark grayish brown (10YR 4/2) clay loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; 10 percent faint clay films on vertical faces of peds; 10 percent gravel; slightly acid (pH 6.2); clear smooth boundary.

Bt2—26 to 34 inches; grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; 30 percent faint clay films on all faces of peds; 14 percent gravel; slightly acid (pH 6.4); clear wavy boundary.

Bt3—34 to 47 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; 20 percent faint clay films on all faces of peds; 14 percent gravel; neutral (pH 6.6); few fine distinct relict redoximorphic concentrations; clear wavy boundary.

2C—47 to 61 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; 30 percent gravel; neutral (pH 6.8); few fine faint relict redoximorphic concentrations.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 20 to 35 inches

A horizon:

Organic matter content—1 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—15 to 25 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 5.6 to 7.3

Bt1 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, clay loam, sandy clay loam
Content of clay—20 to 35 percent
Content of rock fragments—6 to 23 percent gravel
Reaction—pH 6.1 to 7.3

Bt2 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—sandy clay loam
Content of clay—20 to 35 percent
Content of rock fragments—5 to 15 percent gravel
Reaction—pH 5.6 to 7.3

2C horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loamy coarse sand, loamy sand
Content of clay—0 to 15 percent
Content of rock fragments—17 to 41 percent gravel
Reaction—pH 6.1 to 7.3

Carey Lake Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Mixed alluvium
Slope range: 0 to 2 percent
Elevation: 4,700 to 6,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 90 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Pachic Argixerolls

Typical Pedon

Carey Lake loam, 0 to 2 percent slopes; about 1.5 miles south and 0.5 mile east of Carey, Idaho; about 50 feet west and 100 feet south of the northeast corner of section 3, T. 2 S., R. 21 E.; latitude 43 degrees 17 minutes 13.9 seconds north and longitude 113 degrees 56 minutes 9.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 8 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; neutral (pH 7.2); clear wavy boundary.

A2—8 to 12 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; neutral (pH 7.0); abrupt wavy boundary.

Bt—12 to 20 inches; grayish brown (10YR 5/2) clay loam, dark brown (10YR 3/3) moist; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; 15 percent faint clay films on all faces of peds; neutral (pH 6.8); abrupt wavy boundary.

BC1—20 to 31 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common fine tubular pores; neutral (pH 7.0); clear smooth boundary.

BC2—31 to 42 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 1 percent fine and medium faint yellowish brown (10YR 5/6) redoximorphic concentrations; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; common fine tubular pores; neutral (pH 7.2); clear smooth boundary.

2C1—42 to 47 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 25 percent fine and medium prominent yellowish brown (10YR 5/6) redoximorphic concentrations; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; neutral (pH 7.2); gradual wavy boundary.
2C2—47 to 72 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; 25 percent fine and medium prominent yellowish brown (10YR 5/6) redoximorphic concentrations; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; neutral (pH 7.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 20 to 35 inches

A horizon:
Organic matter content—2 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—12 to 18 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.3

Bt horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, loam, clay loam
Content of clay—22 to 33 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.3

BC horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, clay loam, fine sandy loam
Content of clay—15 to 28 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.3

2C horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam, fine sandy loam, very fine sandy loam
Content of clay—10 to 18 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.8

Chijer Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Buttes
Parent material: Eolian deposits
Slope range: 1 to 4 percent
Elevation: 4,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical Pedon

Chijer very fine sandy loam in an area of McPan-Chijer complex, 1 to 6 percent slopes; about 6 miles west and 1.5 miles south of Gooding, Idaho; about 2,580 feet south and 110 feet east of the northwest corner of section 17, T. 6 S., R. 14 E.; latitude 42 degrees 54 minutes 7.9 seconds north and longitude 114 degrees 49 minutes 49.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) moist; weak very thin and thin platy structure parting to moderate very fine and fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine irregular and few very fine tubular pores; noneffervescent; neutral (pH 6.9); abrupt smooth boundary.

A2—2 to 6 inches; brown (10YR 5/3) very fine sandy loam, brown (10YR 4/3) moist; moderate very coarse prismatic structure parting to weak thin platy; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots in cracks; many very fine and few fine irregular and few very fine tubular pores; noneffervescent; slightly alkaline (pH 7.4); clear smooth boundary.

Bk—6 to 11 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate very coarse prismatic structure parting to weak thin platy; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots in cracks; many very fine tubular and common very fine irregular pores; 9 percent carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.1); clear wavy boundary.

Bkq1—11 to 16 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular and irregular pores; 20 percent carbonate finely disseminated throughout; violently effervescent; 5 percent cicada nodules weakly cemented with carbonate and silica; moderately alkaline (pH 8.3); clear smooth boundary.

Bkq2—16 to 19 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; moderate thick, medium, and thin platy structure; hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine irregular and few very fine tubular pores; 20 percent carbonate finely disseminated throughout; violently effervescent; plates highly disturbed by cicada nodules; 20 percent cicada nodules strongly cemented with carbonate and silica and 5 percent cicada nodules weakly cemented with carbonate and silica; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bkq3—19 to 24 inches; very pale brown (10YR 8/3) silt loam, pale brown (10YR 6/3) moist; massive; hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 15 percent carbonate finely disseminated throughout; violently effervescent; 30 percent cicada nodules strongly cemented with carbonate and silica and 5 percent cicada nodules weakly cemented with carbonate and silica; moderately alkaline (pH 8.4); clear wavy boundary.

Bkq4—24 to 29 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 15 percent carbonate finely disseminated throughout; violently effervescent; 35 percent cicada nodules cemented with carbonate and silica; moderately alkaline (pH 8.4); gradual wavy boundary.

Bkq5—29 to 48 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 5/3) moist; massive; very hard, very firm, slightly sticky and nonplastic; common very fine roots; common very fine tubular and few very fine and fine irregular pores; 15 percent carbonate finely disseminated throughout; violently effervescent; 35 percent cicada nodules cemented with carbonate and silica; moderately alkaline (pH 8.3); gradual wavy boundary.

Bkq6—48 to 61 inches; light yellowish brown (10YR 6/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, slightly sticky and nonplastic; few very fine roots; common very fine tubular pores; 15 percent carbonate finely disseminated throughout; violently effervescent; vertical fractures containing roots and coatings of carbonate and silica; moderately alkaline (pH 8.4).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 6 to 15 inches

A horizon:
- Organic matter content—0.6 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—very fine sandy loam
- Content of clay—8 to 18 percent
- Content of rock fragments—0 to 9 percent gravel
- Calcium carbonate equivalent—0 to 15 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 6.6 to 7.6

Bk horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, very fine sandy loam, loam
- Content of clay—8 to 18 percent
- Content of rock fragments—0 to 9 percent gravel
- Calcium carbonate equivalent—6 to 40 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—2 to 4
- Reaction—pH 7.9 to 8.4

Bkq horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, very fine sandy loam, loam
- Content of clay—8 to 13 percent
- Content of rock fragments—0 to 12 percent gravel and 0 to 6 percent cobbles
- Calcium carbonate equivalent—16 to 40 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—2 to 8
- Reaction—pH 7.9 to 8.4

Cinderhurst Series

Depth class: Very shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Lava fields
Parent material: Eolian deposits, volcanic ash, and cinders over basalt
Slope range: 2 to 15 percent

Elevation: 4,800 to 6,100 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Medial-skeletal, amorphic, frigid Lithic Vitrixerands

Typical Pedon

Cinderhurst extremely cobbly medial silt loam in an area of Lava flows-Cinderhurst complex, 2 to 15 percent slopes; about 15 miles east and 6 miles north of Carey, Idaho; 1,260 feet north and 50 feet west of the southeast corner of section 19, T. 1 N., R. 24 E.; latitude 43 degrees 24 minutes 0 seconds north and longitude 113 degrees 38 minutes 7.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; brown (10YR 4/3) extremely cobbly medial silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 15 percent gravel and 50 percent cobbles; slightly acid (pH 6.2); clear smooth boundary.
Bw—3 to 8 inches; yellowish brown (10YR 5/4) very cobbly medial silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 5 percent gravel and 35 percent cobbles; slightly acid (pH 6.4); clear smooth boundary.
2R—8 to 18 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 1 to 10 inches to lithic bedrock
Thickness of andic soil properties: 1 to 10 inches

A horizon:
- Organic matter content—2 to 4 percent
- Texture (fraction less than 2 millimeters in diameter)—medial silt loam
- Content of clay—15 to 20 percent
- Content of rock fragments—15 to 17 percent gravel and 45 to 60 percent cobbles
- Reaction—pH 6.1 to 7.3

Bw horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—medial silt loam, medial loam
- Content of clay—18 to 25 percent
- Content of rock fragments—5 to 35 percent gravel and 35 to 40 percent cobbles
- Reaction—pH 6.1 to 7.3

Cox Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Plains
Landform: Lava plains
Parent material: Eolian deposits over volcanic rock
Slope range: 2 to 15 percent
Elevation: 4,300 to 4,700 feet

Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 85 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Ultic Haploxerolls

Typical Pedon

Cox very stony sandy loam in an area of Cox-Rehfield-Rock outcrop complex, 2 to 15 percent slopes; about 22 miles east and 8 miles south of Carey, Idaho; about 500 feet east and 400 feet north of the southwest corner of section 33, T. 2 S., R. 25 E.; latitude 43 degrees 12 minutes 1.1 seconds north and longitude 113 degrees 29 minutes 30.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; brown (10YR 4/3) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots around fragments; many very fine interstitial pores; 15 percent gravel and 30 percent stones and cobbles; slightly acid (pH 6.4); clear wavy boundary.

AB—3 to 7 inches; dark yellowish brown (10YR 4/4) very cobbly fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots around fragments; many very fine interstitial pores; 20 percent gravel and 35 percent stones and cobbles; neutral (pH 6.6); clear wavy boundary.

Bw—7 to 12 inches; dark yellowish brown (10YR 4/4) very cobbly fine sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots around fragments; many very fine tubular pores; 10 percent gravel and 40 percent cobbles and stones; neutral (pH 7.0); abrupt wavy boundary.

2R—12 to 22 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Thickness of mollic epipedon: 8 to 12 inches

A horizon:

- Organic matter content—2 to 4 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam
- Content of clay—15 to 20 percent
- Content of rock fragments—15 to 17 percent gravel and 25 to 45 percent cobbles and stones
- Reaction—pH 6.1 to 7.3

AB and Bw horizons:

- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam, fine sandy loam
- Content of clay—18 to 25 percent
- Content of rock fragments—5 to 25 percent gravel and 35 to 40 percent cobbles and stones
- Reaction—pH 6.1 to 7.3

Craters Series

Depth class: Very deep
Drainage class: Well drained

Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Alluvium derived from volcanic ash and cinders
Slope range: 1 to 5 percent
Elevation: 5,500 to 6,120 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Medial, amorphic, frigid Humic Vitrixerands

Typical Pedon

Craters very gravelly medial sandy loam in an area of Goodalfs-Craters association, 0 to 5 percent slopes; about 0.75 mile north of Craters of the Moon National Monument Headquarters; 2,160 feet west and 2,380 feet south of the northeast corner of section 27, T. 2 N., R. 24 E.; latitude 43 degrees 28 minutes 28.9 seconds north and longitude 113 degrees 35 minutes 0.3 second west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and medium roots; many very fine interstitial pores; 35 percent gravel-sized cinders; neutral (pH 7.0); clear wavy boundary.

A2—4 to 10 inches; dark grayish brown (10YR 4/2) very gravelly medial sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many fine and medium roots; many very fine and fine and common medium tubular pores; 45 percent gravel-sized cinders; neutral (pH 7.2); clear smooth boundary.

Bw1—10 to 22 inches; brown (10YR 4/3) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; many fine and medium tubular pores; 35 percent gravel-sized cinders; neutral (pH 7.3); clear smooth boundary.

Bw2—22 to 38 inches; brown (10YR 4/3) gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; massive; hard, friable, slightly sticky and slightly plastic; common fine roots; many fine and medium tubular pores; 25 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.

Bw3—38 to 60 inches; dark yellowish brown (10YR 4/4) gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; many fine and medium tubular pores; 20 percent gravel-sized cinders; slightly alkaline (pH 7.5).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 20 to 40 inches
Thickness of andic soil properties: 60 inches or more

A1 horizon:

Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—2 to 6 percent
Content of rock fragments—25 to 45 percent gravel
Reaction—pH 6.6 to 7.3

A2 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—4 to 8 percent
Content of rock fragments—35 to 55 percent gravel
Reaction—pH 6.6 to 7.3

Bw1 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—6 to 10 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.6 to 7.3

Bw2 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—8 to 14 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

Bw3 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—10 to 12 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

Deerhorn Series

Depth class: Moderately deep to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Lava plains
Landform: Buttes
Parent material: Eolian deposits over basalt
Slope range: 2 to 15 percent
Elevation: 4,500 to 5,000 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 85 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Argiduridic Durixerolls

Typical Pedon

Deerhorn fine sandy loam in an area of Deerhorn-Wildors complex, 2 to 8 percent slopes; about 19 miles east and 6 miles south of Carey, Idaho; about 2,600 feet east and 800 feet south of the northwest corner of section 33, T. 2 S., R. 24 E.; latitude 43 degrees 12 minutes 43.4 seconds north and longitude 113 degrees 36 minutes 16.4 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 9 inches; dark grayish brown (10YR 4/2) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine interstitial pores; neutral (pH 7.0); clear wavy boundary.

Bt—9 to 17 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky

and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; 10 percent patchy faint clay films on surfaces along pores and 15 percent patchy faint clay films on all faces of peds; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bk—17 to 21 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; weak fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; few very fine and fine tubular pores; 10 percent carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

2Bkqm—21 to 24 inches; very pale brown (10YR 7/3) cemented material; violently effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

3R—24 to 34 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 30 inches to an indurated duripan and 22 to 35 inches to lithic bedrock

Thickness of mollic epipedon: 7 to 11 inches

Depth to secondary carbonates: 10 to 20 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam
Content of clay—10 to 15 percent
Reaction—pH 6.1 to 7.6

Bt horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, sandy clay loam, sandy loam
Content of clay—18 to 30 percent
Reaction—pH 6.1 to 7.6

Bk horizon:

Thickness—3 to 6 inches
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—15 to 25 percent
Content of rock fragments—0 to 18 percent gravel and 0 to 3 percent cobbles
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 9.0

Deuce Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Mixed alluvium and loess over basalt
Slope range: 2 to 20 percent
Elevation: 4,500 to 5,800 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Loamy, mixed, superactive, frigid Lithic Xeric Haplocalcids

Typical Pedon

Deuce stony silt loam in an area of Deuce-Nargon-Lava flows complex, 2 to 12 percent slopes; about 8 miles northeast of Twin Buttes and about 10 miles northwest of Atomic City, Idaho; about 2,150 feet north and 400 feet east of the southwest corner of section 14, T. 3 N., R. 33 E.; latitude 43 degrees 35 minutes 21.4 seconds north and longitude 112 degrees 33 minutes 29.8 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; light brownish gray (10YR 6/2) stony silt loam, brown (10YR 4/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 5 percent gravel, 5 percent cobbles, and 5 percent stones; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bk1—2 to 6 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments; 5 percent gravel, 5 percent cobbles, and 2 percent stones; strongly effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

Bk2—6 to 11 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments; 2 percent gravel, 3 percent cobbles, and 1 percent stones; strongly effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

Bkq—11 to 19 inches; very pale brown (10YR 8/3) silt loam, pale brown (10YR 6/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few very fine tubular pores; 15 percent silica coatings on bottom surface of rock fragments and 35 percent carbonate coatings on bottom surface of rock fragments; 2 percent gravel, 5 percent cobbles, and 3 percent stones; strongly effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.

2R—19 to 29 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Depth to calcic horizon: 2 to 8 inches

A horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—15 to 25 percent
Content of rock fragments—2 to 5 percent gravel, 0 to 5 percent cobbles, and 5 to 10 percent stones
Calcium carbonate equivalent—3 to 10 percent
Reaction—pH 7.6 to 8.4

Bk horizon:

Thickness—3 to 6 inches
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, clay loam
Content of clay—16 to 30 percent
Content of rock fragments—5 to 20 percent gravel, 0 to 17 percent cobbles, and 2 to 9 percent stones

Calcium carbonate equivalent—15 to 30 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bkq horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, clay loam, silty clay loam
Content of clay—18 to 32 percent
Content of rock fragments—0 to 22 percent gravel, 4 to 16 percent cobbles, and 2 to 9 percent stones
Calcium carbonate equivalent—20 to 35 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.9 to 8.4

Dollarhide Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium over siltstone, conglomerate, sandstone, or quartzite
Slope range: 15 to 60 percent
Elevation: 5,200 to 9,300 feet
Mean annual precipitation: 16 to 24 inches
Mean annual air temperature: 36 to 43 degrees F
Frost-free period: 30 to 65 days

Taxonomic class: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical Pedon

Dollarhide very gravelly silt loam in an area of Lavacreek-Dollarhide complex, 15 to 60 percent slopes; about 10 miles north and 11 miles west of the Craters of the Moon National Monument Headquarters; 500 feet south and 2,150 feet west of the northeast corner of section 26, T. 3 N., R. 23 E.; latitude 43 degrees 34 minutes 8.5 seconds north and longitude 113 degrees 40 minutes 56.9 seconds west; NAD 83. (Colors are for moist soil unless otherwise noted.)

A—0 to 8 inches; dark brown (10YR 3/3) very gravelly silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine interstitial pores; 35 percent gravel and 5 percent cobbles; neutral (pH 6.8); clear smooth boundary.

Bw—8 to 13 inches; brown (10YR 4/3) very gravelly loam, pale brown (10YR 6/3) dry; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine and fine interstitial pores; 30 percent gravel and 15 percent cobbles; neutral (pH 7.0); abrupt wavy boundary.

2R—13 to 23 inches; quartzite.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Thickness of mollic epipedon: 7 to 13 inches

A horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—8 to 18 percent
Content of rock fragments—19 to 40 percent gravel and 5 to 15 percent cobbles
Reaction—pH 6.6 to 7.8

Bw horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, fine sandy loam
Content of clay—8 to 18 percent
Content of rock fragments—14 to 30 percent gravel and 15 to 55 percent cobbles
Reaction—pH 6.6 to 7.8

Drage Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Foothills
Landform: Fan remnants, hillslopes
Parent material: Mixed alluvium
Slope range: 0 to 20 percent
Elevation: 4,800 to 7,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Calcic Argixerolls

Typical Pedon

Drage gravelly loam in an area of Justesen-Drage complex, 1 to 20 percent slopes; about 1 mile south of Timbered Dome and 12 miles west of Arco, Idaho; about 200 feet north and 1,100 feet east of the southwest corner of section 7, T. 3 N., R. 25 E.; latitude 43 degrees 35 minutes 47 seconds north and longitude 113 degrees 31 minutes 51.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and moderately plastic; many very fine roots; common fine irregular pores; 10 percent gravel, 3 percent cobbles, and 2 percent stones; neutral (pH 7.2); clear smooth boundary.

BA—6 to 15 inches; grayish brown (10YR 5/2) gravelly clay loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 15 percent gravel and 5 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt—15 to 30 inches; pale brown (10YR 6/3) very cobbly clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine, and coarse roots; common fine tubular pores; 15 percent faint clay films on all faces of peds; 20 percent gravel, 20 percent cobbles, and 3 percent stones; neutral (pH 7.2); gradual wavy boundary.

Bk1—30 to 43 inches; pale brown (10YR 6/3) extremely cobbly clay loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, moderately sticky and

moderately plastic; common very fine and coarse roots; few fine tubular pores; 15 percent carbonate coatings on bottom surface of rock fragments; 1 percent threadlike carbonate masses; 30 percent gravel, 25 percent cobbles, and 6 percent stones; slightly effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

Bk2—43 to 60 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and coarse roots; few fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments; 35 percent gravel, 25 percent cobbles, and 3 percent stones; strongly effervescent; moderately alkaline (pH 7.9).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 12 to 17 inches
Depth to calcic horizon: 25 to 35 inches

A horizon:
- Organic matter content—1 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—12 to 27 percent
- Content of rock fragments—10 to 50 percent gravel, 3 to 25 percent cobbles, and 2 to 5 percent stones
- Reaction—pH 6.6 to 7.6

BA horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam
- Content of clay—27 to 35 percent
- Content of rock fragments—5 to 25 percent gravel and 3 to 10 percent cobbles
- Reaction—pH 6.6 to 7.6

Bt horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy clay loam, clay loam
- Content of clay—28 to 35 percent
- Content of rock fragments—15 to 43 percent gravel, 3 to 45 percent cobbles, and 0 to 5 percent stones
- Reaction—pH 6.6 to 7.6

Bk1 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, loam, sandy loam
- Content of clay—15 to 32 percent
- Content of rock fragments—25 to 35 percent gravel, 25 to 30 percent cobbles, and 2 to 10 percent stones
- Calcium carbonate equivalent—5 to 20 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Bk2 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam
- Content of clay—10 to 27 percent
- Content of rock fragments—25 to 35 percent gravel, 25 to 45 percent cobbles, and 2 to 5 percent stones
- Calcium carbonate equivalent—15 to 25 percent

Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Echocrater Series

Depth class: Moderately deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Colluvium derived from volcanic ash and cinders
Slope range: 20 to 40 percent
Elevation: 4,870 to 6,400 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 90 days

Taxonomic class: Ashy-skeletal over fragmental or cindery, glassy, frigid Typic Vitrixerands

Typical Pedon

Echocrater gravelly ashy loamy sand, 20 to 40 percent slopes; 1,900 feet east and 1,200 feet south of the northwest corner of section 29, T. 1 N., R. 25 E.; latitude 43 degrees 23 minutes 34 seconds north and longitude 113 degrees 57 minutes 0 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; brown (10YR 4/3) gravelly ashy loamy sand, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine interstitial pores; 20 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.

A2—3 to 8 inches; brown (10YR 4/3) gravelly ashy loamy sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine tubular pores; 25 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.

Bw—8 to 15 inches; brown (10YR 4/3) very gravelly ashy loamy sand, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; slightly hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 45 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.

2BC—15 to 25 inches; very dark brown (10YR 2/2) very gravelly ashy loamy sand, black (10YR 2/1) moist; massive; slightly hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine and few medium interstitial pores; 50 percent gravel-sized cinders; slightly alkaline (pH 7.5); clear wavy boundary.

2C—25 to 60 inches; very dark brown (10YR 2/2) cinders, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, and medium and few coarse interstitial pores; 90 percent gravel-sized cinders.

Range in Characteristics

Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Thickness of andic soil properties: 20 to 35 inches

A1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

A2 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

Bw horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—35 to 55 percent gravel
Reaction—pH 7.4 to 7.8

2BC horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—40 to 55 percent gravel
Reaction—pH 7.4 to 7.8

2C horizon:
Organic matter content—none
Texture—cinders
Content of clay—0 to 1 percent
Content of rock fragments—90 to 100 percent gravel
Reaction—pH 6.6 to 7.3

Farmell Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Landscape: Plains
Landform: Lava plains
Parent material: Mixed silty alluvium
Slope range: 0 to 2 percent
Elevation: 4,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Fine, smectitic, mesic Xeric Haplargids

Typical Pedon

Farmell silt loam in an area of Farmell-Power-Playas complex, 0 to 2 percent slopes; about 14 miles east of Dietrich, Idaho; about 2,000 feet east and 1,800 feet north of the southwest corner of section 8, T. 6 S., R. 21 E.; latitude 42 degrees 54 minutes 46.6 seconds north and longitude 113 degrees 59 minutes 10.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine vesicular pores; neutral (pH 7.2); abrupt smooth boundary.

A2—3 to 5 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine tubular pores; light gray (10YR 7/2), bleached very fine sand and silt grains on faces of peds; neutral (pH 7.0); abrupt smooth boundary.

Bt1—5 to 8 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; strong fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; 65 percent faint clay films on all faces of peds; light gray (10YR 7/2), bleached very fine sand and silt grains on faces of peds; slightly alkaline (pH 7.4); clear wavy boundary.

Bt2—8 to 16 inches; light yellowish brown (10YR 6/4) clay, brown (10YR 5/3) moist; moderate medium and coarse prismatic structure; very hard, very firm, moderately sticky and moderately plastic; few very fine and fine roots; common very fine and fine tubular pores; 45 percent distinct clay films on all faces of peds; slightly alkaline (pH 7.6); clear smooth boundary.

Bt3—16 to 36 inches; very pale brown (10YR 7/4) silty clay, light yellowish brown (10YR 6/4) moist; weak medium and coarse prismatic structure; very hard, very firm, moderately sticky and moderately plastic; few very fine tubular pores; 15 percent faint clay films on all faces of peds; moderately alkaline (pH 8.4); clear wavy boundary.

Bk1—36 to 56 inches; very pale brown (10YR 7/3) silty clay loam, light yellowish brown (10YR 6/4) moist; massive; very hard, firm, moderately sticky and moderately plastic; few very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk2—56 to 80 inches; light yellowish brown (10YR 6/4) silty clay, yellowish brown (10YR 5/4) moist; massive; very hard, firm, moderately sticky and moderately plastic; slightly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 18 to 36 inches

A horizon:
Organic matter content—0.7 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—20 to 25 percent
Reaction—pH 6.6 to 7.6

Bt1 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam
Content of clay—27 to 35 percent
Reaction—pH 7.4 to 7.6

Bt2 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—clay
Content of clay—40 to 55 percent
Reaction—pH 7.4 to 7.6

Bt3 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, silty clay, clay
Content of clay—35 to 50 percent
Reaction—pH 7.4 to 8.4

Bk1 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam
Content of clay—27 to 40 percent
Calcium carbonate equivalent—15 to 40 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bk2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, silty clay
Content of clay—35 to 50 percent
Calcium carbonate equivalent—10 to 15 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Goodalfs Series

Depth class: Very deep
Drainage class: Moderately well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Landscape: Valleys
Landform: Valley floors
Parent material: Silty alluvium and loess
Slope range: 0 to 1 percent
Elevation: 5,500 to 6,120 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Vitrandic Haploxerolls

Typical Pedon

Goodalfs medial silt loam in an area of Goodalfs-Craters association, 0 to 5 percent slopes; 0.75 mile north of Craters of the Moon National Monument Headquarters; 2,000 feet west and 1,655 feet north of the southeast corner of section 27, T. 2 N., R. 24 E.; latitude 43 degrees 28 minutes 17.4 seconds north and longitude 113 degrees 34 minutes 58.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; dark grayish brown (10YR 4/2) medial silt loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine interstitial pores; neutral (pH 7.0); clear wavy boundary.

Bw1—3 to 10 inches; brown (10YR 4/3) ashy silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine and fine and common medium tubular pores; neutral (pH 7.2); clear smooth boundary.

Bw2—10 to 24 inches; brown (10YR 4/3) ashy silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; many fine and medium tubular pores; neutral (pH 7.3); clear smooth boundary.
Bw3—24 to 40 inches; brown (10YR 4/3) ashy silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine roots; many fine and medium tubular pores; slightly alkaline (pH 7.4); clear smooth boundary.
Bw4—40 to 60 inches; dark yellowish brown (10YR 4/4) ashy silt loam, dark brown (10YR 3/3) moist; massive; hard, friable, moderately sticky and moderately plastic; few fine roots; many fine and medium tubular pores; slightly alkaline (pH 7.5).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 20 to 30 inches
Thickness of andic soil properties: 2 to 8 inches (A horizon)

A horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—medial silt loam
Content of clay—6 to 16 percent
Reaction—pH 6.6 to 7.3

Bw1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy silt loam
Content of clay—8 to 18 percent
Reaction—pH 6.6 to 7.3

Bw2 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—ashy silt loam
Content of clay—18 to 24 percent
Reaction—pH 6.6 to 7.3

Bw3 horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy silty clay loam
Content of clay—26 to 32 percent
Reaction—pH 7.4 to 7.8

Bw4 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy silt loam
Content of clay—20 to 26 percent
Reaction—pH 7.4 to 7.8

Goodington Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Plains
Landform: Lava plains
Parent material: Loess over basalt
Slope range: 2 to 4 percent
Elevation: 4,800 to 6,200 feet

Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Fine, smectitic, frigid Typic Palexerolls

Typical Pedon

Goodington silt loam in an area of Goodington-Manard complex, 2 to 8 percent slopes; about 6 miles east and 6 miles north of Carey, Idaho; about 2,200 feet west and 2,000 feet north of the southeast corner of section 15, T. 1 N., R. 22 E.; latitude 43 degrees 24 minutes 59.9 seconds north and longitude 113 degrees 49 minutes 16.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine tubular pores; neutral (pH 6.8); clear smooth boundary.

A2—6 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; many fine tubular pores; neutral (pH 6.6); clear smooth boundary.

BA—10 to 12 inches; brown (7.5YR 4/2) silty clay loam, dark brown (7.5YR 3/2) moist; moderate fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine roots; many fine tubular pores; pale brown (10YR 6/3) silt coatings on faces of peds; slightly acid (pH 6.4); clear smooth boundary.

Bt1—12 to 18 inches; brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; strong medium prismatic structure; very hard, very firm, very sticky and very plastic; few fine roots; many fine tubular pores; many slickensides on faces of peds; slightly acid (pH 6.2); clear smooth boundary.

Bt2—18 to 26 inches; brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; strong medium angular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; common fine tubular pores; continuous distinct clay films on all faces of peds; neutral (pH 6.8); clear smooth boundary.

Bt3—26 to 34 inches; brown (7.5YR 5/4) silty clay loam, brown (7.5YR 4/4) moist; moderate medium angular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; common fine tubular pores; continuous distinct clay films on all faces of peds; moderately alkaline (pH 8.2); clear smooth boundary.

Bk—34 to 56 inches; pinkish gray (7.5YR 6/2) silty clay loam, brown (7.5YR 4/2) moist; moderate medium angular blocky structure; very hard, very firm, very sticky and very plastic; few fine tubular pores; 10 percent carbonate finely disseminated; strongly effervescent; nearly continuous pinkish white (7.5YR 8/2) carbonate coatings on faces of peds and in pores; moderately alkaline (pH 8.4); clear smooth boundary.

R—56 to 66 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 12 inches
Depth to calcic horizon: 34 to 50 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—15 to 25 percent
Reaction—pH 6.1 to 7.3

Bt1 and Bt2 horizons:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay, clay
Content of clay—40 to 55 percent
Reaction—pH 6.6 to 7.6

Bt3 and Bk horizons:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, silt loam
Content of clay—25 to 40 percent
Content of rock fragments—0 to 3 percent gravel and 0 to 9 percent cobbles
Calcium carbonate equivalent—15 to 40 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Grassycone Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from volcanic ash and cinders with some loess influence
Slope range: 30 to 60 percent
Elevation: 5,970 to 8,500 feet
Mean annual precipitation: 16 to 24 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 30 to 65 days

Taxonomic class: Medial, amorphic Humic Xeric Vitricryands

Typical Pedon

Grassycone medial fine sandy loam in an area of Lavacreek-Dollarhide-Grassycone complex, 30 to 60 percent slopes; about 3.5 miles north and 2.5 miles west of Craters of the Moon National Monument Headquarters; about 17 miles west of Arco, Idaho; 1,300 feet west of the southeast corner of section 8, T. 2 N., R. 24 E.; latitude 43 degrees 30 minutes 38.4 seconds north and longitude 113 degrees 37 minutes 9.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch; slightly decomposed plant material.
A1—1 to 3 inches; dark brown (10YR 3/3) medial fine sandy loam, black (10YR 2/1) moist; strong fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; 10 percent gravel-sized cinders; neutral (pH 7.2); clear smooth boundary.
A2—3 to 9 inches; brown (10YR 4/3) gravelly medial fine sandy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; 15 percent gravel-sized cinders; neutral (pH 7.0); gradual smooth boundary.
Bw—9 to 57 inches; dark yellowish brown (10YR 4/4) gravelly medial fine sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few coarse roots; many very fine and fine tubular pores; 25 percent gravel-sized cinders and 2 percent cobbles; neutral (pH 6.8); clear wavy boundary.

2C—57 to 65 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine tubular pores; 15 percent gravel and 35 percent cobbles; neutral (pH 6.6).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of andic soil properties: 40 to 60 inches (A and Bw horizons)
Thickness of mollic epipedon: 40 to 60 inches (A and Bw horizons)

Oi horizon:
- Organic matter content—60 to 95 percent
- Texture—slightly decomposed plant material
- Content of clay—0 to 25 percent
- Reaction—pH 4.5 to 5.5

A1 horizon:
- Organic matter content—2 to 6 percent
- Texture (fraction less than 2 millimeters in diameter)—medial fine sandy loam
- Content of clay—2 to 6 percent
- Content of rock fragments—0 to 10 percent gravel
- Reaction—pH 5.6 to 7.3

A2 horizon:
- Organic matter content—1 to 4 percent
- Texture (fraction less than 2 millimeters in diameter)—medial fine sandy loam
- Content of clay—4 to 6 percent
- Content of rock fragments—10 to 35 percent gravel
- Reaction—pH 5.6 to 7.3

Bw horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—medial fine sandy loam
- Content of clay—6 to 10 percent
- Content of rock fragments—15 to 26 percent gravel and 0 to 2 percent cobbles
- Reaction—pH 5.6 to 7.3

2C horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, clay loam
- Content of clay—24 to 30 percent
- Content of rock fragments—10 to 19 percent gravel and 25 to 40 percent cobbles
- Reaction—pH 6.6 to 7.3

Hal Series

Depth class: Deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Foothills
Landform: Hillslopes
Parent material: Volcanic ash and cinders
Slope range: 15 to 60 percent
Elevation: 5,300 to 8,500 feet
Mean annual precipitation: 16 to 18 inches

Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 40 to 65 days

Taxonomic class: Medial, amorphic Humic Xeric Vitricryands

Typical Pedon

Hal gravelly medial loam in an area of Hal-Moonville association, 15 to 60 percent slopes; about 1.5 miles north and 0.5 mile west of Craters of the Moon National Monument Headquarters; about 17 miles west of Arco, Idaho; 945 feet east and 1,160 feet north of the southwest corner of section 23, T. 2 N., R. 24 E.; latitude 43 degrees 29 minutes 4.0 seconds north and longitude 113 degrees 34 minutes 18.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 6 inches; brown (10YR 4/3) gravelly medial loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 15 percent gravel-sized cinders; neutral (pH 6.6); clear smooth boundary.

A2—6 to 12 inches; brown (7.5YR 5/4) gravelly medial loam, dark brown (7.5YR 3/4) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine and fine tubular pores; 20 percent gravel-sized cinders; neutral (pH 6.8); clear wavy boundary.

Bw1—12 to 24 inches; brown (7.5YR 5/4) gravelly medial loam, dark brown (7.5YR 3/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine tubular pores; 25 percent gravel-sized cinders; neutral (pH 6.8); gradual wavy boundary.

Bw2—24 to 40 inches; brown (7.5YR 5/4) gravelly medial loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few very fine tubular pores; 30 percent gravel-sized cinders; neutral (pH 6.9); abrupt wavy boundary.

2C—40 to 60 inches; very dark brown (10YR 2/2) extremely gravelly ashy loamy coarse sand, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; 80 percent gravel-sized cinders; neutral (pH 7.0).

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Thickness of mollic epipedon: 10 to 20 inches
Thickness of andic soil properties: More than 60 inches

A1 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 6.1 to 7.3

A2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 6.1 to 7.3

Bw1 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 6.6 to 7.3

Bw2 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 6.6 to 7.3

2C horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy coarse sand
Content of clay—2 to 10 percent
Content of rock fragments—36 to 85 percent gravel
Reaction—pH 6.6 to 7.3

Hodad Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Loess over basalt
Slope range: 2 to 4 percent
Elevation: 4,300 to 5,000 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls

Typical Pedon

Hodad silt loam in an area of Neeley-Hodad complex, 2 to 4 percent slopes; about 10 miles west of American Falls, Idaho; about 1,975 feet west and 1,965 feet south of the northeast corner of section 27, T. 7 S., R. 29 E.; latitude 42 degrees 47 minutes 9 seconds north and longitude 113 degrees 3 minutes 0 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 7 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine interstitial pores; slightly alkaline (pH 7.8); gradual smooth boundary.

Bw—7 to 17 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; slightly effervescent; slightly alkaline (pH 7.8); gradual smooth boundary.

Bk—17 to 36 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine

tubular pores; carbonate finely disseminated throughout; strongly effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.
2R—36 to 46 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Thickness of mollic epipedon: 7 to 12 inches
Depth to calcic horizon: 15 to 20 inches

A horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 3 percent cobbles
Calcium carbonate equivalent—0 to 5 percent
Sodium adsorption ratio—0 to 10
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 8.4

Bw horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 3 percent cobbles
Calcium carbonate equivalent—0 to 5 percent
Sodium adsorption ratio—0 to 10
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.6 to 8.4

Bk horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 3 percent cobbles
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—0 to 10
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Howcan Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium over latite or andesite
Slope range: 15 to 60 percent
Elevation: 5,000 to 9,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 45 to 80 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical Pedon

Howcan loam in an area of Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes; about 3.5 miles southwest of Moore, Idaho; about 1,800 feet north and 2,100 feet east of the southwest corner of section 1, T. 4 N., R. 25 E.; latitude 43 degrees 42 minutes 6.1 seconds north and longitude 113 degrees 25 minutes 41.8 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches; dark brown (10YR 3/3) loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and moderately plastic; common very fine and fine roots; common very fine tubular pores; 10 percent gravel, 1 percent cobbles, and 3 percent stones; neutral (pH 7.2); gradual wavy boundary.

A2—4 to 10 inches; dark yellowish brown (10YR 4/4) extremely cobbly loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 25 percent gravel, 30 percent cobbles, and 10 percent stones; neutral (pH 7.2); gradual wavy boundary.

Bt1—10 to 22 inches; yellowish brown (10YR 5/6) extremely stony loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to strong medium subangular blocky; very hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine tubular pores; 35 percent distinct clay films on all faces of peds; 20 percent gravel, 20 percent cobbles, and 25 percent stones; neutral (pH 7.2); gradual wavy boundary.

Bt2—22 to 38 inches; yellowish brown (10YR 5/6) extremely stony loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine tubular pores; 35 percent faint clay films on all faces of peds; 25 percent gravel, 20 percent cobbles, and 25 percent stones; neutral (pH 7.2); gradual irregular boundary.

BC—38 to 54 inches; brownish yellow (10YR 6/6) extremely stony sandy loam, dark yellowish brown (10YR 4/6) moist; weak fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; common fine tubular pores; 15 percent faint clay films on rock fragments; 15 percent gravel, 25 percent cobbles, and 25 percent stones; neutral (pH 7.2); abrupt irregular boundary.

R—54 to 64 inches; andesite.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 16 inches

A1 horizon:

Organic matter content—2 to 6 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 25 percent
Content of rock fragments—2 to 11 percent gravel, 0 to 5 percent cobbles, and 1 to 3 percent stones
Reaction—pH 6.6 to 7.8

A2 horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 25 percent

Content of rock fragments—25 to 58 percent gravel, 10 to 40 percent cobbles, and 0 to 10 percent stones
Reaction—pH 6.6 to 7.8

Bt horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—20 to 25 percent
Content of rock fragments—20 to 58 percent gravel, 10 to 40 percent stones, and 10 to 30 percent cobbles
Reaction—pH 6.6 to 7.8

BC horizon:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam
Content of clay—15 to 23 percent
Content of rock fragments—10 to 36 percent gravel, 20 to 34 percent cobbles, and 20 to 34 percent stones
Reaction—pH 6.6 to 7.8

Huddle Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Volcanic ash and cinders from eolian deposits over volcanic rock
Slope range: 2 to 12 percent
Elevation: 4,600 to 6,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 90 days

Taxonomic class: Medial, amorphic, frigid Typic Vitrixerands

Typical Pedon

Huddle gravelly medial loam in an area of Huddle-Moonville complex, 2 to 12 percent slopes; about 11 miles west and 0.5 mile south of Arco, Idaho; about 1,650 feet south and 2,250 feet east of the northwest corner of section 27, T. 2 N., R. 26 E.; latitude 43 degrees 28 minutes 26.4 seconds north and longitude 113 degrees 20 minutes 51.3 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; brown (10YR 4/3) gravelly medial loam, very dark brown (10YR 2/2) moist; weak medium platy structure parting to moderate medium granular; soft, very friable, nonsticky and nonplastic; many very fine and fine, common medium, and few coarse roots; many very fine tubular and common very fine irregular pores; 20 percent gravel-sized cinders; slightly alkaline (pH 7.6); abrupt smooth boundary.

Bw1—2 to 7 inches; brown (10YR 4/3) medial loam, very dark brown (10YR 2/2) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine, common medium, and few coarse roots; many very fine irregular and few fine tubular pores; 10 percent gravel-sized cinders; slightly alkaline (pH 7.6); clear smooth boundary.

Bw2—7 to 19 inches; yellowish brown (10YR 5/4) medial loam, dark yellowish brown (10YR 3/4) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine irregular and few fine tubular pores; 10 percent gravel-sized cinders; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bk1—19 to 39 inches; light yellowish brown (10YR 6/4) medial loam, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine irregular and many very fine and fine tubular pores; 5 percent gravel-sized cinders; strongly effervescent; moderately alkaline (pH 7.9); abrupt irregular boundary.

Bk2—39 to 50 inches; very pale brown (10YR 8/3) loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and fine tubular pores; 5 percent gravel-sized cinders and 5 percent cobbles; violently effervescent; moderately alkaline (pH 7.9); abrupt irregular boundary.

2R—50 to 60 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of andic soil properties: 39 to 45 inches
Depth to calcic horizon: 15 to 22 inches

A horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—medial loam
- Content of clay—7 to 15 percent
- Content of rock fragments—15 to 30 percent gravel
- Reaction—pH 7.4 to 7.6

Bw1 horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—medial loam
- Content of clay—7 to 15 percent
- Content of rock fragments—5 to 14 percent gravel
- Reaction—pH 7.4 to 7.6

Bw2 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—medial loam
- Content of clay—12 to 18 percent
- Content of rock fragments—5 to 14 percent gravel
- Reaction—pH 7.4 to 7.6

Bk1 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—medial loam
- Content of clay—12 to 18 percent
- Content of rock fragments—5 to 10 percent gravel
- Calcium carbonate equivalent—15 to 35 percent
- Sodium adsorption ratio—0 to 8
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Bk2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—18 to 27 percent
Content of rock fragments—5 to 10 percent gravel and 0 to 10 percent cobbles
Calcium carbonate equivalent—15 to 35 percent
Sodium adsorption ratio—0 to 8
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Hutchley Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Loess and colluvium over andesite or latite
Slope range: 15 to 35 percent
Elevation: 5,000 to 9,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 37 to 43 degrees F
Frost-free period: 45 to 80 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls

Typical Pedon

Hutchley gravelly loam in an area of Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes; about 12 miles northwest of Arco, Idaho; about 600 feet north and 600 feet east of the southwest corner of section 18, T. 4 N., R. 25 E.; latitude 43 degrees 40 minutes 9.7 seconds north and longitude 113 degrees 31 minutes 57.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; weak fine granular structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine irregular pores; 20 percent gravel, 10 percent cobbles, and 3 percent stones; neutral (pH 7.2); clear smooth boundary.

Bt—4 to 11 inches; brown (10YR 5/3) very cobbly clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; common fine tubular pores; 15 percent faint clay films on all faces of peds; 20 percent gravel, 20 percent cobbles, and 1 percent stones; neutral (pH 7.2); clear wavy boundary.

R—11 to 21 inches; andesite.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 16 inches

A horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—15 to 25 percent
Content of rock fragments—15 to 28 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones
Reaction—pH 6.6 to 7.8

Bt horizon:
Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam
Content of clay—27 to 35 percent
Content of rock fragments—9 to 27 percent gravel, 6 to 25 percent cobbles, and 0 to 5 percent stones
Reaction—pH 6.6 to 7.8

Hutton Series

Depth class: Very deep
Drainage class: Poorly drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Valleys
Landform: Flood plains
Parent material: Mixed alluvium influenced with volcanic ash
Slope range: 0 to 2 percent
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Fine, smectitic, frigid Cumulic Vertic Endoaquolls

Typical Pedon

Hutton clay loam, 0 to 2 percent slopes; about 6 miles northwest of Carey, Idaho; about 1,060 feet north and 80 feet west of the southeast corner of section 7, T. 1 S., R. 21 E.; latitude 43 degrees 20 minutes 55.5 seconds north and longitude 113 degrees 59 minutes 46.2 seconds west; NAD 83. (Colors are for moist soil unless otherwise noted.)

A1—0 to 2 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak thin platy structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; neutral (pH 6.6); clear smooth boundary.

A2—2 to 4 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; strong fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many fine tubular pores; neutral (pH 6.8); clear smooth boundary.

BA—4 to 13 inches; very dark brown (10YR 2/2) clay loam, dark gray (10YR 4/1) dry; weak fine angular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine roots; many fine tubular pores; neutral (pH 6.8); gradual smooth boundary.

Bg1—13 to 19 inches; very dark gray (10YR 3/1) clay loam, dark gray (10YR 4/1) dry; 1 percent fine prominent brown (7.5YR 5/4) redoximorphic concentrations; strong medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine roots; common fine tubular pores; neutral (pH 6.9); gradual smooth boundary.

Bg2—19 to 24 inches; very dark grayish brown (10YR 3/2) clay, gray (10YR 5/1) dry; 15 percent fine prominent brown (7.5YR 4/4) redoximorphic concentrations; strong medium angular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; few fine tubular pores; neutral (pH 6.6); clear smooth boundary.

Cg—24 to 62 inches; dark gray (2.5Y 4/1) clay, gray (2.5Y 5/1) dry; massive; very hard, very firm, very sticky and very plastic; neutral (pH 6.6).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 24 to 30 inches

A horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam
Content of clay—27 to 35 percent
Content of rock fragments—0 to 9 percent gravel
Reaction—pH 6.6 to 7.3

BA and Bg1 horizons:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam
Content of clay—27 to 40 percent
Content of rock fragments—0 to 9 percent gravel
Reaction—pH 6.6 to 7.3

Bg2 and Cg horizons:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—clay, silty clay
Content of clay—40 to 60 percent
Content of rock fragments—5 to 20 percent gravel
Reaction—pH 6.6 to 7.8

Infernocone Series

Depth class: Moderately deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Volcanic ash and/or cinders
Slope range: 2 to 40 percent
Elevation: 4,840 to 6,420 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 70 to 110 days

Taxonomic class: Ashy-skeletal over fragmental or cindery, glassy, frigid Humic Vitrixerands

Typical Pedon

Infernocone gravelly ashy sandy loam, 2 to 20 percent slopes; about 1.5 miles south of Craters of the Moon National Monument Headquarters; 1,800 feet east and 600 feet north of the southwest corner of section 18, T. 1 N., R. 25 E.; latitude 43 degrees 24 minutes 45.2 seconds north and longitude 113 degrees 31 minutes 45.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 5 inches; dark brown (10YR 3/3) gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine tubular pores; 20 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.
A2—5 to 10 inches; dark brown (10YR 3/3) gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and

nonplastic; common very fine and fine and few medium roots; common very fine tubular pores; 25 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear smooth boundary.

Bw—10 to 25 inches; dark yellowish brown (10YR 3/4) gravelly ashy sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, firm, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 25 percent gravel-sized cinders; slightly alkaline (pH 7.4); gradual wavy boundary.

2BC—25 to 35 inches; very dark brown (10YR 2/2) very gravelly ashy sandy loam, black (10YR 2/1) moist; massive; slightly hard, firm, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 50 percent gravel-sized cinders; slightly alkaline (pH 7.5); clear smooth boundary.

2C—35 to 60 inches; very dark brown (10YR 2/2) cinders, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, and medium interstitial pores; 90 percent gravel-sized cinders.

Range in Characteristics

Depth to restrictive feature: 25 to 40 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 15 inches

Thickness of andic soil properties: 25 to 40 inches

A1 horizon:

Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—2 to 6 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

A2 horizon:

Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—2 to 6 percent
Content of rock fragments—20 to 30 percent gravel
Reaction—pH 7.4 to 7.8

Bw horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—1 to 4 percent
Content of rock fragments—15 to 30 percent gravel
Reaction—pH 7.4 to 7.8

2BC horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sandy loam
Content of clay—1 to 4 percent
Content of rock fragments—40 to 55 percent gravel
Reaction—pH 7.4 to 7.8

2C horizon:

Organic matter content—none
Texture—cinders
Content of clay—0 to 1 percent
Content of rock fragments—90 to 100 percent gravel
Reaction—pH 6.6 to 7.3

Justesen Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Foothills, plains
Landform: Fan remnants, lava plains
Parent material: Mixed alluvium
Slope range: 1 to 20 percent
Elevation: 4,700 to 7,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 60 to 110 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical Pedon

Justesen loam in an area of Justesen-Drage complex, 1 to 20 percent slopes; about 5 miles north and 4 miles east of Arco, Idaho; about 1,160 feet north and 2,360 feet east of the southwest corner of section 3, T. 4 N., R. 27 E.; latitude 43 degrees 41 minutes 57.4 seconds north and longitude 113 degrees 13 minutes 39.3 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common very fine tubular pores; neutral (pH 7.0); clear smooth boundary.

A2—3 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure parting to strong medium granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; neutral (pH 7.0); clear smooth boundary.

Bt1—10 to 16 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 35 percent faint clay films on all faces of peds and on surfaces along pores; neutral (pH 7.2); clear wavy boundary.

Bt2—16 to 25 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common very fine and fine and few medium and coarse roots; common very fine tubular pores; 15 percent faint clay films on all faces of peds and on surfaces along pores; neutral (pH 7.2); clear wavy boundary.

Bk1—25 to 43 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine roots; common fine tubular pores; 30 percent spherical carbonate masses and 30 percent threadlike carbonate masses; 2 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2—43 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine roots; few fine tubular pores; 30 percent spherical carbonate masses and 30 percent threadlike carbonate masses; 2 percent gravel; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 12 to 17 inches
Depth to calcic horizon: 25 to 35 inches

A horizon:
- Organic matter content—1 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—12 to 18 percent
- Content of rock fragments—0 to 3 percent gravel
- Reaction—pH 6.6 to 7.3

Bt horizon:
- Organic matter content—0.5 to 2.0 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silty clay loam, loam
- Content of clay—23 to 34 percent
- Content of rock fragments—0 to 9 percent gravel
- Reaction—pH 6.6 to 7.6

Bk horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, fine sandy loam
- Content of clay—15 to 20 percent
- Content of rock fragments—0 to 15 percent gravel
- Calcium carbonate equivalent—15 to 35 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.9 to 8.4

Kecko Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and eolian deposits
Slope range: 2 to 8 percent
Elevation: 2,800 to 4,700 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Xeric Haplocalcids

Typical Pedon

Kecko loamy fine sand in an area of Vining-Kecko-Rock outcrop complex, 2 to 12 percent slopes; about 3 miles east and 5 miles west of Minidoka, Idaho; about 2,600 feet south and 1,000 feet east of the northwest corner of section 28, T. 8 S., R. 27 E.; latitude 42 degrees 41 minutes 49.7 seconds north and longitude 113 degrees 18 minutes 42.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; neutral (pH 6.8); clear wavy boundary.
Bw1—5 to 14 inches; brown (10YR 5/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and tubular pores; neutral (pH 7.0); gradual wavy boundary.
Bw2—14 to 30 inches; pale brown (10YR 6/3) fine sandy loam, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; slightly alkaline (pH 7.4); clear wavy boundary.
Bk1—30 to 40 inches; light gray (10YR 7/2) fine sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine interstitial pores; 15 percent carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
Bk2—40 to 60 inches; very pale brown (10YR 7/3) fine sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; 20 percent carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 20 to 35 inches

A horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loamy fine sand
Content of clay—3 to 8 percent
Content of rock fragments—0 to 6 percent gravel
Reaction—pH 6.6 to 7.5

Bw horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam, loam
Content of clay—10 to 18 percent
Content of rock fragments—0 to 6 percent gravel
Reaction—pH 6.6 to 7.5

Bk horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, fine sandy loam
Content of clay—10 to 18 percent
Content of rock fragments—0 to 6 percent gravel
Calcium carbonate equivalent—15 to 25 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Lavacreek Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes

Parent material: Volcanic ash over colluvium over quartzite, sandstone, conglomerate, or siltstone
Slope range: 15 to 60 percent
Elevation: 5,500 to 9,300 feet
Mean annual precipitation: 16 to 24 inches
Mean annual air temperature: 36 to 43 degrees F
Frost-free period: 30 to 60 days

Taxonomic class: Medial-skeletal, amorphic Humic Xeric Vitricryands

Typical Pedon

Lavacreek very gravelly medial silt loam in an area of Lavacreek-Dollarhide complex, 15 to 60 percent slopes; about 10 miles north and 11 miles west of Craters of the Moon National Monument Headquarters; 1,850 feet south and 1,650 feet west of the northeast corner of section 26, T. 3 N., R. 23 E.; latitude 43 degrees 33 minutes 55.0 seconds north and longitude 113 degrees 40 minutes 50.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 10 inches; brown (10YR 5/3) very gravelly medial silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and fine roots; common very fine interstitial pores; 25 percent gravel and 20 percent cobbles; neutral (pH 6.6); clear smooth boundary.

Bw1—10 to 19 inches; pale brown (10YR 6/3) very gravelly medial loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; common very fine interstitial pores; 30 percent gravel and 25 percent cobbles; neutral (pH 6.6); gradual wavy boundary.

Bw2—19 to 36 inches; yellowish brown (10YR 5/4) extremely cobbly medial loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; common very fine interstitial pores; 30 percent gravel and 35 percent cobbles; neutral (pH 6.7); clear wavy boundary.

BC—36 to 42 inches; pale brown (10YR 6/3) extremely cobbly medial sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine and common fine and medium roots; common very fine tubular pores; 40 percent gravel and 40 percent cobbles; neutral (pH 6.7); gradual wavy boundary.

2C—42 to 59 inches; pale brown (10YR 6/3) extremely cobbly sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common very fine tubular pores; 40 percent gravel and 40 percent cobbles; neutral (pH 6.8); diffuse irregular boundary.

2R—59 to 69 inches; quartzite.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 20 inches
Thickness of andic soil properties: 40 to 60 inches

A horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—medial silt loam
Content of clay—7 to 15 percent
Content of rock fragments—35 to 41 percent gravel
Reaction—pH 6.1 to 7.3

Bw1 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—15 to 36 percent gravel and 20 to 31 percent cobbles
Reaction—pH 6.1 to 7.3

Bw2 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—20 to 35 percent gravel and 25 to 40 percent cobbles
Reaction—pH 6.1 to 7.3

BC horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam, medial loam
Content of clay—6 to 10 percent
Content of rock fragments—20 to 40 percent gravel and 25 to 45 percent cobbles
Reaction—pH 5.6 to 7.3

2C horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam
Content of clay—6 to 10 percent
Content of rock fragments—20 to 40 percent gravel and 25 to 45 percent cobbles
Reaction—pH 5.6 to 7.3

Lesbut Series

Depth class: Shallow to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Mixed alluvium
Slope range: 0 to 4 percent
Elevation: 5,000 to 5,690 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 65 to 90 days

Taxonomic class: Sandy-skeletal, mixed, frigid Calcidic Haploxerolls

Typical Pedon

Lesbut gravelly loam in an area of Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes; about 1.2 miles north of Moore, Idaho; about 1,200 feet north and 2,500 feet east of the southwest corner of section 16, T. 5 N., R. 26 E.; latitude 43 degrees 45 minutes 27.6 seconds north and longitude 113 degrees 22 minutes 0 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine irregular pores; 15 percent gravel; neutral (pH 7.0); clear smooth boundary.

Bw1—3 to 7 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine tubular pores; 15 percent gravel; neutral (pH 7.0); clear smooth boundary.

Bw2—7 to 13 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 15 percent gravel and 2 percent cobbles; neutral (pH 7.0); clear wavy boundary.

Bw3—13 to 19 inches; brown (10YR 5/3) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common very fine tubular pores; 45 percent gravel and 5 percent cobbles; neutral (pH 7.2); gradual wavy boundary.

2Bq—19 to 41 inches; grayish brown (10YR 5/2) extremely gravelly loamy sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; many very fine and common fine and medium roots; 35 percent silica coatings on bottom surface of rock fragments; 55 percent gravel and 10 percent cobbles; slightly effervescent; slightly alkaline (pH 7.6); clear wavy boundary.

2Bkq—41 to 60 inches; grayish brown (10YR 5/2) extremely gravelly loamy sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 35 percent silica coatings on bottom surface of rock fragments; 70 percent gravel and 10 percent cobbles; slightly effervescent; slightly alkaline (pH 7.6).

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 13 inches

A horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—12 to 22 percent
Content of rock fragments—15 to 26 percent gravel
Reaction—pH 6.6 to 7.3

Bw1 and Bw2 horizons:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—12 to 22 percent
Content of rock fragments—15 to 30 percent gravel and 0 to 3 percent cobbles
Reaction—pH 6.6 to 7.3

Bw3 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam
Content of clay—8 to 18 percent
Content of rock fragments—25 to 50 percent gravel and 5 to 10 percent cobbles
Calcium carbonate equivalent—0 to 5 percent
Reaction—pH 6.6 to 7.8

2Bq and 2Bkq horizons:

Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loamy sand
Content of clay—0 to 5 percent

Content of rock fragments—40 to 70 percent gravel and 10 to 37 percent cobbles
Calcium carbonate equivalent—1 to 5 percent
Reaction—pH 7.6 to 7.8

Manard Series

Depth class: Moderately deep to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Plains
Landform: Lava plains
Parent material: Colluvium and residuum derived from rhyolite or basalt
Slope range: 2 to 8 percent
Elevation: 4,800 to 6,200 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Fine, smectitic, frigid Typic Durixerolls

Typical Pedon

Manard stony silt loam in an area of Goodington-Manard complex, 2 to 8 percent slopes; about 12 miles east and 5 miles north of Carey, Idaho; about 2,500 feet east and 200 feet north of the southwest corner of section 23, T. 1 S., R. 22 E.; latitude 43 degrees 19 minutes 1.3 seconds north and longitude 113 degrees 48 minutes 27.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; dark grayish brown (10YR 4/2) stony silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine tubular pores; 10 percent stones, 3 percent cobbles, and 10 percent gravel; neutral (pH 7.0); clear wavy boundary.

BA—6 to 11 inches; brown (10YR 4/3) stony silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common very fine and fine tubular pores; 5 percent stones, 5 percent cobbles, and 10 percent gravel; neutral (pH 7.0); abrupt smooth boundary.

Bt—11 to 20 inches; brown (10YR 5/3) silty clay, dark yellowish brown (10YR 4/4) moist; moderate fine and medium prismatic structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots between peds; few very fine and fine tubular pores; 45 percent discontinuous prominent clay films on all faces of peds; neutral (pH 7.2); gradual smooth boundary.

Btk—20 to 26 inches; brown (10YR 5/3) clay, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots between peds; few very fine and fine tubular pores; 10 percent patchy distinct clay films on all faces of peds; 10 percent carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 8.0); abrupt wavy boundary.

Bkqm—26 to 28 inches; very pale brown (10YR 7/3) cemented material, pale brown (10YR 6/3) moist; abrupt smooth boundary.

R—28 to 38 inches; basalt.

Range in Characteristics

Depth to restrictive features: 20 to 37 inches to an indurated duripan and 21 to 38 inches to lithic bedrock
Thickness of mollic epipedon: 7 to 11 inches

A and BA horizons:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—20 to 27 percent
Content of rock fragments—0 to 13 percent gravel, 3 to 6 percent cobbles, and 3 to 10 percent stones
Reaction—pH 6.1 to 7.3

Bt horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay, clay
Content of clay—40 to 50 percent
Content of rock fragments—0 to 3 percent cobbles and 0 to 3 percent stones
Reaction—pH 6.6 to 7.5

Btk horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—clay
Content of clay—40 to 60 percent
Calcium carbonate equivalent—3 to 10 percent
Reaction—pH 7.8 to 8.4

McBiggam Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Landscape: Plains
Landform: Lava plains
Parent material: Loess and silty alluvium over residuum derived from basalt
Slope range: 2 to 8 percent
Elevation: 5,300 to 5,600 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 70 to 90 days

Taxonomic class: Fine-silty, mixed, superactive, frigid Typic Palexerolls

Typical Pedon

McBiggam silt loam, 2 to 8 percent slopes; about 2 miles north and 18 miles east of Carey, Idaho; 2,500 feet east and 400 feet north of the southwest corner of section 15, T. 1 S., R. 24 E.; latitude 43 degrees 19 minutes 54.5 seconds north and longitude 113 degrees 35 minutes 6.3 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; moderate very fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very

fine interstitial pores; 10 percent gravel-sized cinders; slightly acid (pH 6.4); clear smooth boundary.

A2—3 to 10 inches; dark brown (10YR 3/3) silt loam, very dark brown (10YR 2/2) moist; moderate fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine interstitial pores; 10 percent gravel-sized cinders; neutral (pH 6.6); clear smooth boundary.

BA—10 to 15 inches; brown (10YR 4/3) silt loam, very dark grayish brown (10YR 3/2) moist; strong fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine, fine, and medium tubular pores; neutral (pH 7.0); clear smooth boundary.

Bt—15 to 26 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 4/3) moist; strong fine and medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine, fine, and medium roots; common very fine and fine tubular pores; 15 percent faint clay films on all faces of peds and on surfaces along pores and 15 percent silt coatings on all faces of peds; 5 percent gravel and 5 percent cobbles; neutral (pH 7.0); abrupt smooth boundary.

2Btb—26 to 36 inches; brown (7.5YR 4/2) silty clay, dark brown (7.5YR 3/4) moist; strong medium and coarse prismatic structure; very hard, very firm, very sticky and moderately plastic; common very fine and fine roots; few very fine tubular pores; 70 percent distinct clay films on surfaces along pores and 70 percent continuous slickensides (pedogenic) on all faces of peds; slightly alkaline (pH 7.4); abrupt wavy boundary.

2Btkb—36 to 46 inches; brown (7.5YR 4/4) silty clay, dark brown (7.5YR 3/4) moist; strong medium angular blocky structure; very hard, very firm, very sticky and moderately plastic; few very fine and fine roots; common very fine tubular pores; 35 percent distinct clay films on surfaces along pores and 70 percent continuous slickensides (pedogenic) on all faces of peds; strongly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

2Bkb—46 to 80 inches; brown (7.5YR 5/4) silty clay loam, brown (7.5YR 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few fine roots; few fine tubular pores; continuous pinkish white carbonate coatings that are (7.5YR 8/2) moist and on all faces of peds and on surfaces along pores; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 10 to 15 inches

A1 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—10 to 15 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.1 to 7.3

A2 horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—10 to 15 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.1 to 7.3

BA horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, silty clay loam

Content of clay—22 to 32 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 6 percent cobbles
Reaction—pH 6.6 to 7.5

Bt horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, silty clay loam
Content of clay—22 to 32 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 6 percent cobbles
Reaction—pH 6.6 to 7.5

2Btb horizon:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay
Content of clay—40 to 50 percent
Content of rock fragments—0 to 3 percent gravel
Reaction—pH 6.6 to 7.5

2Btkb horizon:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay
Content of clay—40 to 50 percent
Content of rock fragments—0 to 3 percent gravel
Calcium carbonate equivalent—3 to 8 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.0

2Bkb horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silty clay loam, clay loam
Content of clay—30 to 40 percent
Content of rock fragments—0 to 3 percent gravel
Calcium carbonate equivalent—3 to 8 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 8.0 to 8.4

McCarey Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains and lava plains
Landform: Lava plains and buttes
Parent material: Mixed alluvium and loess over basalt
Slope range: 0 to 30 percent
Elevation: 4,500 to 5,500 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 70 to 110 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Calcic Argixerolls

Typical Pedon

McCarey silt loam in an area of McCarey-Rock outcrop complex, 0 to 12 percent slopes; about 11 miles southwest of Atomic City, Idaho; about 700 feet south and 1,200 feet west of the northeast corner of section 8, T. 1 S., R. 30 E.; latitude 43 degrees

21 minutes 18.9 seconds north and longitude 112 degrees 58 minutes 16.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common fine irregular pores; 5 percent gravel; neutral (pH 7.0); clear smooth boundary.

A2—5 to 12 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 5 percent gravel; neutral (pH 7.0); clear smooth boundary.

Bt—12 to 18 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 3/3) moist; weak fine prismatic structure parting to moderate medium subangular blocky; hard, firm, slightly sticky and moderately plastic; common very fine and fine roots; common very fine irregular and tubular pores; 15 percent faint clay films on all faces of peds; 5 percent gravel; slightly alkaline (pH 7.5); clear smooth boundary.

Bk1—18 to 28 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 10 percent medium and 10 percent coarse carbonate nodules; 5 percent gravel; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bk2—28 to 33 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, moderately sticky and slightly plastic; few very fine roots; common very fine tubular pores; 5 percent gravel; violently effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

2R—33 to 43 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 20 inches
Depth to calcic horizon: 15 to 20 inches

A horizon:
- Organic matter content—1 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
- Content of clay—10 to 20 percent
- Content of rock fragments—0 to 9 percent gravel and 0 to 3 percent cobbles
- Reaction—pH 6.1 to 7.6

Bt horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silty clay loam, silt loam
- Content of clay—20 to 34 percent
- Content of rock fragments—0 to 9 percent gravel and 0 to 3 percent cobbles
- Reaction—pH 6.1 to 7.6

Bk horizon:
- Organic matter content—0 to 1 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, loam
- Content of clay—15 to 25 percent
- Content of rock fragments—0 to 18 percent gravel and 0 to 3 percent cobbles
- Calcium carbonate equivalent—15 to 30 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 9.0

McPan Series

Depth class: Moderately deep to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Lava plains and plains
Landform: Buttes and lava plains
Parent material: Silty alluvium and loess over volcanic rock
Slope range: 1 to 10 percent
Elevation: 3,400 to 4,700 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Xeric Argidurids

Typical Pedon

McPan silt loam in an area of McPan-Chijer complex, 1 to 6 percent slopes; about 4 miles north and 3 miles west of Gooding, Idaho; about 1,650 feet north and 400 feet east of the southwest corner of section 14, T. 5 S., R. 14 E.; latitude 42 degrees 59 minutes 11.0 seconds north and longitude 114 degrees 46 minutes 13.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; brown (10YR 5/3) silt loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure parting to moderate fine and medium granular; hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine and common fine and medium interstitial pores; slightly acid (pH 6.4); clear wavy boundary.

Bt—6 to 10 inches; brown (10YR 4/3) silty clay loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium prismatic structure parting to strong fine and medium subangular blocky; hard, friable, moderately sticky and moderately plastic; common very fine and few fine, medium, and coarse roots; 10 percent patchy faint clay films on surfaces along pores and 15 percent patchy faint clay films on all faces of peds; neutral (pH 7.0); clear wavy boundary.

Btk—10 to 20 inches; dark yellowish brown (10YR 4/4) silty clay loam, dark yellowish brown (10YR 3/4) moist; moderate very fine, fine, and medium subangular blocky structure; hard, very friable, moderately sticky and moderately plastic; common very fine and few fine roots; 10 percent patchy faint clay films on surfaces along pores and 15 percent patchy faint clay films on all faces of peds; 10 percent carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

Bkq1—20 to 24 inches; very pale brown (10YR 7/3) cobbly loam, light yellowish brown (10YR 6/4) moist; weak fine and medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; 25 percent carbonate finely disseminated throughout; violently effervescent; carbonate and silica coatings 1 to 2 millimeters thick on sides and bottom of rock fragments; moderately alkaline (pH 8.0); abrupt wavy boundary.

Bkq2—24 to 27 inches; very pale brown (10YR 7/3) cobbly loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; 25 percent carbonate finely disseminated throughout; violently effervescent; carbonate and silica coatings 1 to 2 millimeters thick on sides and bottom of rock fragments; moderately alkaline (pH 8.0); abrupt wavy boundary.

Bkqm—27 to 29 inches; very pale brown (10YR 8/2) cemented material; violently effervescent; silica cap less than 1 millimeter thick; abrupt wavy boundary.

2R—29 to 39 inches; basalt.

Range in Characteristics

Depth to restrictive features: 20 to 39 inches to an indurated duripan and 21 to 40 inches to lithic bedrock
Depth to calcic horizon: 15 to 30 inches

A horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—18 to 25 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 6 percent cobbles
Reaction—pH 6.1 to 7.3

Bt and Btk horizons:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, silty clay loam
Content of clay—24 to 32 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 9 percent cobbles
Calcium carbonate equivalent—0 to 10 percent
Reaction—pH 7.6 to 7.8

Bkq horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—20 to 26 percent
Content of rock fragments—0 to 9 percent gravel and 0 to 14 percent cobbles
Calcium carbonate equivalent—20 to 30 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Molyneux Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and colluvium
Slope range: 2 to 8 percent
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 11 to 16 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Ultic Argixerolls

Typical Pedon

Molyneux loam in an area of McCarey-Molyneux complex, 2 to 8 percent slopes; about 3 miles west and 1 mile north of Hailey, Idaho; about 1,000 feet south and 1,000 feet west of the northeast corner of section 24, T. 2 N., R. 17 E.; latitude 43 degrees 29 minutes 46.0 seconds north and longitude 114 degrees 22 minutes 13.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 8 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common

very fine interstitial pores; 10 percent gravel; slightly acid (pH 6.2); clear wavy boundary.

A2—8 to 13 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; many very fine, fine, and medium interstitial pores; 5 percent gravel; slightly acid (pH 6.2); abrupt wavy boundary.

Bt1—13 to 24 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure; hard, friable, moderately sticky and moderately plastic; few very fine, fine, medium, and coarse roots; many fine and medium tubular pores; 10 percent gravel; slightly acid (pH 6.4); clear wavy boundary.

Bt2—24 to 50 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong fine and medium angular blocky structure; very hard, firm, moderately sticky and moderately plastic; few very fine and medium roots; many fine and medium interstitial pores; 60 percent discontinuous faint clay films on all faces of peds; 10 percent gravel; neutral (pH 6.6); clear wavy boundary.

Bt3—50 to 75 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few very fine, fine, and medium roots; many fine and medium tubular pores; 60 percent discontinuous faint clay films on all faces of peds; 15 percent gravel; neutral (pH 6.8).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 10 to 20 inches

A horizon:
- Organic matter content—1 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—10 to 20 percent
- Content of rock fragments—0 to 10 percent gravel
- Reaction—pH 6.1 to 7.3

Bt1 horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, silt loam, clay loam
- Content of clay—25 to 35 percent
- Content of rock fragments—3 to 15 percent gravel
- Reaction—pH 6.1 to 7.3

Bt2 and Bt3 horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, sandy clay loam
- Content of clay—20 to 30 percent
- Content of rock fragments—8 to 31 percent gravel and 0 to 3 percent cobbles
- Reaction—pH 6.1 to 7.8

Moonville Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Foothills, plains

Landform: Hillslopes, lava plains
Parent material: Volcanic ash and cinders
Slope range: 2 to 60 percent
Elevation: 4,600 to 8,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 50 to 90 days

Taxonomic class: Medial, amorphic, frigid Typic Vitrixerands

Typical Pedon

Moonville medial loam (fig. 17) in an area of Huddle-Moonville complex, 2 to 12 percent slopes; about 10.5 miles south of Arco, Idaho; 1,800 feet west and 2,950 feet south of the northeast corner of section 22, T. 2 N., R. 26 E.; latitude 43 degrees 29 minutes 2.1 seconds north and longitude 113 degrees 20 minutes 30.0 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 7 inches; brown (7.5YR 5/4) medial loam, dark brown (7.5YR 3/4) moist; weak thick platy structure parting to weak fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine interstitial pores; neutral (pH 6.6); gradual wavy boundary.

Bw1—7 to 15 inches; strong brown (7.5YR 5/6) medial loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine interstitial pores; neutral (pH 6.8); abrupt wavy boundary.

Bw2—15 to 31 inches; light yellowish brown (10YR 6/4) medial loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few fine and common medium roots; many very fine and fine interstitial and few fine tubular pores; neutral (pH 7.0); clear wavy boundary.

Bk—31 to 60 inches; light gray (10YR 7/2) medial loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; common fine and medium tubular pores; 20 percent carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 20 to 35 inches
Thickness of andic soil properties: More than 60 inches

A horizon:
Organic matter content—4 to 15 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—0 to 10 percent gravel
Reaction—pH 6.6 to 7.3

Bw1 horizon:
Organic matter content—2 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—0 to 10 percent gravel
Reaction—pH 6.6 to 7.3

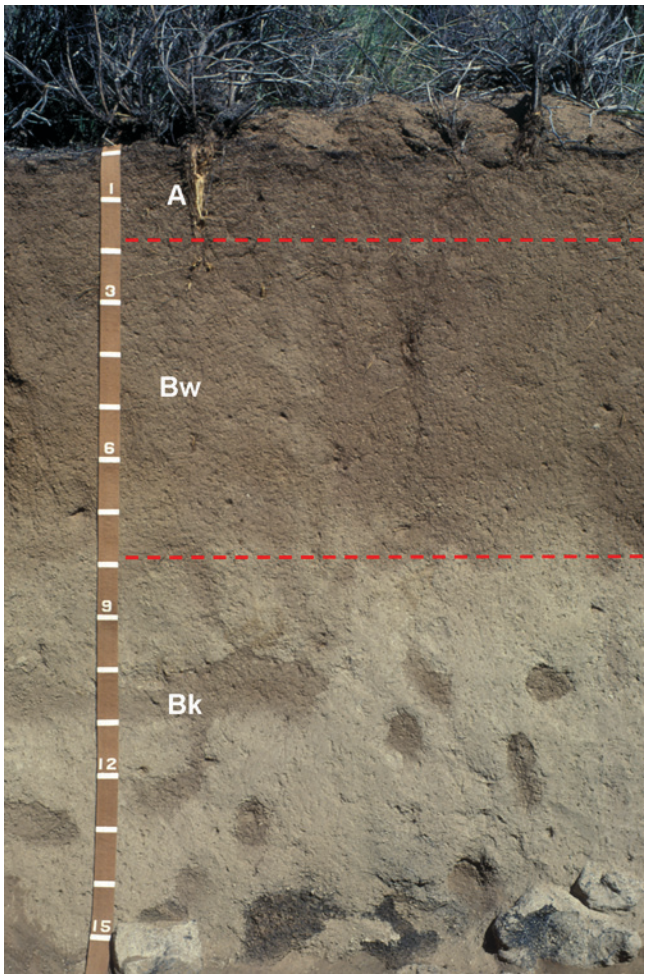


Figure 17.—Pedon of Moonville medial loam. Moonville soils generally are in proximity to volcanic vents. The soils formed in volcanic ash and cinders. The darker areas in the Bk horizon are krotovinas, which are animal burrows that have been filled with soil material from the A and Bw horizons. The numerals on tape indicate decimeters.

Bw2 horizon:

Organic matter content—2 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—0 to 10 percent gravel
Reaction—pH 6.6 to 7.3

Bk horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—7 to 15 percent
Content of rock fragments—0 to 10 percent gravel
Calcium carbonate equivalent—5 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.9 to 8.4

Nargon Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium over basalt
Slope range: 2 to 20 percent
Elevation: 4,500 to 5,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids

Typical Pedon

Nargon silt loam in an area of Nargon-Deuce-Lava flows complex, 2 to 20 percent slopes; about 0.5 mile east of Tea Kettle Butte and 6 miles southeast of Butte City, Idaho; about 2,400 feet south and 2,500 feet east of the northwest corner of section 18, T. 2 N., R. 28 E.; latitude 43 degrees 30 minutes 3.9 seconds north and longitude 113 degrees 10 minutes 2.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine vesicular pores; 2 percent gravel, 2 percent cobbles, and 2 percent stones; slightly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bk—2 to 7 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and few very fine and medium roots; common very fine tubular pores; 1 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bkq1—7 to 11 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; few very fine tubular pores; 35 percent carbonate and silica coatings on bottom surface of rock fragments; 10 percent medium carbonate nodules and 10 percent coarse carbonate nodules; 2 percent gravel and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bkq2—11 to 21 inches; very pale brown (10YR 8/3) stony loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common very fine tubular pores; 35 percent carbonate and silica coatings on bottom surface of rock fragments; 1 percent medium carbonate nodules and 1 percent coarse carbonate nodules; 5 percent gravel, 5 percent cobbles, and 10 percent stones; violently effervescent; moderately alkaline (pH 8.2); abrupt irregular boundary.

2R—21 to 31 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Depth to calcic horizon: 2 to 8 inches

A horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, loam
- Content of clay—17 to 25 percent
- Content of rock fragments—0 to 11 percent gravel, 2 to 6 percent cobbles, and 0 to 3 percent stones
- Calcium carbonate equivalent—3 to 15 percent
- Reaction—pH 7.6 to 8.4

Bk horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silt loam
- Content of clay—20 to 30 percent
- Content of rock fragments—0 to 12 percent gravel and 0 to 3 percent cobbles
- Calcium carbonate equivalent—15 to 25 percent
- Sodium adsorption ratio—0 to 2
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Bkq1 horizon:
- Organic matter content—0 to 1 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, clay loam, loam
- Content of clay—18 to 35 percent
- Content of rock fragments—0 to 12 percent gravel and 0 to 5 percent cobbles
- Calcium carbonate equivalent—15 to 30 percent
- Sodium adsorption ratio—0 to 2
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 8.0 to 8.4

Bkq2 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, loam
- Content of clay—18 to 25 percent
- Content of rock fragments—0 to 10 percent gravel, 0 to 10 percent cobbles, and 5 to 10 percent stones
- Calcium carbonate equivalent—15 to 30 percent
- Sodium adsorption ratio—0 to 2
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 8.0 to 8.4

Neeley Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Loess
Slope range: 2 to 4 percent
Elevation: 4,300 to 5,000 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls

Typical Pedon

Neeley silt loam in an area of Neeley-Hodad complex, 2 to 4 percent slopes; about 2 miles southeast of American Falls, Idaho; about 735 feet south and 340 feet east of the northwest corner of section 4, T. 8 S., R. 31 E.; latitude 42 degrees 45 minutes 35.6 seconds north and longitude 112 degrees 50 minutes 53.1 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; moderately alkaline (pH 8.0); gradual smooth boundary.

A2—6 to 10 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine and fine tubular pores; moderately alkaline (pH 8.0); gradual smooth boundary.

Bw—10 to 16 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine and fine tubular pores; moderately alkaline (pH 8.2); clear wavy boundary.

Bk—16 to 45 inches; light gray (10YR 7/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and medium roots; many very fine tubular pores; 5 percent fine and medium carbonate bands and 5 percent fine and medium carbonate masses in matrix; 10 percent very coarse moderately cemented insect casts throughout; strongly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

C—45 to 60 inches; light gray (10YR 7/2) silt loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many very fine and fine tubular pores; carbonate finely disseminated throughout; slightly effervescent; strongly alkaline (pH 8.6).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 7 to 12 inches
Depth to calcic horizon: 15 to 20 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—5 to 14 percent
Calcium carbonate equivalent—0 to 5 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 8.4

Bw horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—6 to 18 percent
Calcium carbonate equivalent—0 to 30 percent
Sodium adsorption ratio—5 to 20
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 9.0

Bk and C horizons:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—6 to 14 percent
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—10 to 20
Electrical conductivity (millimhos per centimeter)—0 to 4
Reaction—pH 8.5 to 9.0

Northcrater Series

Depth class: Very deep
Drainage class: Somewhat excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Volcanic ash and/or cinders
Slope range: 2 to 25 percent
Elevation: 4,800 to 6,510 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 70 to 110 days

Taxonomic class: Ashy-skeletal, glassy, nonacid, frigid Vitrandic Xerorthents

Typical Pedon

Northcrater very gravelly ashy loamy sand in an area of Cinder land-Northcrater association, 2 to 50 percent slopes; about 1 mile southeast of Craters of the Moon National Monument Headquarters; 1,100 feet north and 1,700 feet west of the southeast corner of section 1, T. 1 N., R. 24 E.; latitude 43 degrees 26 minutes 34.5 seconds north and longitude 113 degrees 32 minutes 32.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches; very dark grayish brown (10YR 3/2) very gravelly ashy loamy sand, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 40 percent gravel-sized cinders; neutral (pH 7.3); clear smooth boundary.

A2—4 to 8 inches; very dark grayish brown (10YR 3/2) very gravelly ashy loamy sand, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; common very fine, fine, and medium interstitial pores; 50 percent gravel-sized cinders; neutral (pH 7.3); clear smooth boundary.

C1—8 to 12 inches; very dark brown (10YR 2/2) extremely gravelly ashy loamy sand, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular pores; 65 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear wavy boundary.

C2—12 to 20 inches; dark yellowish brown (10YR 4/4) very gravelly ashy loamy sand, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common very fine, fine, and medium interstitial pores; 45 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear wavy boundary.

C3—20 to 30 inches; very dark grayish brown (10YR 3/2) very gravelly ashy loamy sand, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common very fine, fine, and medium interstitial pores; 50 percent gravel-sized cinders; slightly alkaline (pH 7.4); clear wavy boundary.

C4—30 to 60 inches; very dark brown (10YR 2/2) very gravelly ashy loamy sand, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, and medium interstitial pores; 55 percent gravel-sized cinders; slightly alkaline (pH 7.4).

Range in Characteristics

Depth to restrictive feature: More than 60 inches

A1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—2 to 6 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.6 to 7.3

A2 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—2 to 6 percent
Content of rock fragments—40 to 60 percent gravel
Reaction—pH 6.6 to 7.3

C1 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—2 to 6 percent
Content of rock fragments—65 to 75 percent gravel
Reaction—pH 7.4 to 7.8

C2 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—2 to 6 percent
Content of rock fragments—40 to 55 percent gravel
Reaction—pH 7.4 to 7.8

C3 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—0 to 6 percent
Content of rock fragments—45 to 60 percent gravel
Reaction—pH 7.4 to 7.8

C4 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—0 to 6 percent
Content of rock fragments—45 to 60 percent gravel
Reaction—pH 7.4 to 7.8

Pagari Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains

Parent material: Mixed alluvium over basalt
Slope range: 2 to 15 percent
Elevation: 4,400 to 4,800 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 90 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Calciargidic Argixerolls

Typical Pedon

Pagari very cobbly sandy loam in an area of Pagari-Rehfield complex, 2 to 15 percent slopes; about 9 miles east and 2 miles south of Carey, Idaho; about 1,250 feet east and 100 feet north of the southwest corner of section 12, T. 2 S., R. 22 E.; latitude 43 degrees 15 minutes 29.4 seconds north and longitude 113 degrees 47 minutes 33.3 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; grayish brown (10YR 5/2) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; many very fine and fine interstitial pores; 5 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; neutral (pH 7.0); clear wavy boundary.

A2—3 to 11 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine and common medium and coarse roots; common very fine and fine tubular pores; 5 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; neutral (pH 7.0); gradual wavy boundary.

AB—11 to 17 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; common very fine and fine tubular pores; 5 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; neutral (pH 7.2); clear wavy boundary.

Bt—17 to 31 inches; yellowish brown (10YR 5/4) extremely cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine, and medium roots; common very fine and fine tubular pores; 5 percent patchy faint clay films between sand grains, 5 percent patchy faint clay films on surfaces along pores, and 10 percent patchy faint clay films on all faces of peds; 10 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; neutral (pH 7.2); clear wavy boundary.

Bk1—31 to 36 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; 15 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; 10 percent carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

Bk2—36 to 46 inches; very pale brown (10YR 7/3) extremely cobbly loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine interstitial pores; 15 percent basalt gravel, 40 percent basalt cobbles, and 10 percent basalt stones; 20 percent carbonate finely disseminated throughout; violently effervescent; slightly alkaline (pH 8.0); abrupt irregular boundary.

2R—46 to 56 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 14 inches
Depth to calcic horizon: 20 to 36 inches

A horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam
- Content of clay—10 to 15 percent
- Content of rock fragments—1 to 14 percent gravel, 23 to 40 percent cobbles, and 0 to 10 percent stones
- Reaction—pH 6.6 to 7.3

AB horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam
- Content of clay—10 to 17 percent
- Content of rock fragments—1 to 14 percent gravel, 23 to 40 percent cobbles, and 0 to 10 percent stones
- Reaction—pH 6.6 to 7.3

Bt horizon:
- Organic matter content—0 to 0.50 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, sandy clay loam, clay loam
- Content of clay—18 to 30 percent
- Content of rock fragments—4 to 14 percent gravel, 30 to 50 percent cobbles, and 9 to 14 percent stones
- Reaction—pH 7.0 to 7.6

Bk horizon:
- Organic matter content—0 to 0.50 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam, sandy clay loam, loam
- Content of clay—14 to 25 percent
- Content of rock fragments—10 to 16 percent gravel, 14 to 45 percent cobbles, and 9 to 17 percent stones
- Calcium carbonate equivalent—5 to 30 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.0

Paulville Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Buttes
Parent material: Loess, mixed alluvium, and lacustrine deposits
Slope range: 1 to 6 percent
Elevation: 3,400 to 4,700 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Xeric Calciargids

Typical Pedon

Paulville loam in an area of Paulville-McPan-Starbuck complex, 1 to 8 percent slopes; about 11 miles north and 11 miles west of Minidoka, Idaho; about 1,400 feet east and 50 feet south of the northwest corner of section 29, T. 5 S., R. 23 E.; latitude 42 degrees 57 minutes 55.6 seconds north and longitude 113 degrees 44 minutes 54.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium and coarse granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; 1 percent medium insect casts throughout; neutral (pH 7.2); clear wavy boundary.

BA—6 to 15 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many very fine and fine tubular pores; 1 percent medium insect casts throughout; slightly alkaline (pH 7.4); clear wavy boundary.

Bt1—15 to 22 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common fine and medium roots; common very fine and fine tubular pores; 10 percent patchy faint clay films on surfaces along pores and 15 percent patchy faint clay films on all faces of peds; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2—22 to 30 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common fine and medium roots; common very fine and fine tubular pores; 10 percent patchy faint clay films on surfaces along pores and 15 percent patchy faint clay films on all faces of peds; slightly alkaline (pH 7.4); abrupt wavy boundary.

Bk1—30 to 33 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; 30 percent carbonate finely disseminated throughout; violently effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

Bk2—33 to 43 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine and fine tubular pores; 30 percent carbonate finely disseminated throughout; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bk3—43 to 50 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; 20 percent carbonate finely disseminated throughout, 5 percent weakly cemented carbonate masses, and 5 percent weakly cemented carbonate bands throughout; violently effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

2C—50 to 64 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine interstitial pores; slightly alkaline (pH 7.6).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 15 to 30 inches

A horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam

Content of clay—16 to 24 percent
Content of rock fragments—0 to 6 percent gravel
Reaction—pH 6.6 to 7.2

BA and Bt horizons:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, silt loam, silty clay loam
Content of clay—18 to 31 percent
Reaction—pH 7.4 to 7.6

Bk horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—very fine sandy loam, silt loam, loam
Content of clay—10 to 15 percent
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—2 to 4
Reaction—pH 7.8 to 8.4

2C horizon:
Organic matter content—0 to 0.50 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam, loamy fine sand
Content of clay—5 to 10 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—2 to 4
Reaction—pH 7.6 to 8.4

Pedleford Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Buttes
Parent material: Mixed alluvium and eolian deposits over basalt
Slope range: 2 to 30 percent
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Calcic Haploxerolls

Typical Pedon

Pedleford very stony loam in an area of McCarey-Pedleford complex, 2 to 30 percent slopes; about 13 miles east of Carey, Idaho; about 300 feet east and 50 feet north of the southwest corner of section 26, T. 1 S., R. 23 E.; latitude 43 degrees 18 minutes 6.6 seconds north and longitude 113 degrees 41 minutes 37.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; brown (10YR 4/3) very stony loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine and few medium and coarse roots; many very fine and

fine interstitial pores; 5 percent basalt gravel, 10 percent basalt cobbles, and 30 percent basalt stones; neutral (pH 7.0); clear wavy boundary.

Bw—5 to 13 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine and fine and few medium and coarse roots; common very fine and fine tubular pores; 5 percent basalt gravel, 10 percent basalt cobbles, and 30 percent basalt stones; slightly alkaline (pH 7.4); abrupt wavy boundary.

Bk1—13 to 29 inches; very pale brown (10YR 7/3) very stony silt loam, yellowish brown (10YR 5/4) moist; massive; very hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; 20 percent carbonate finely disseminated throughout; 5 percent basalt gravel, 20 percent basalt cobbles, and 30 percent basalt stones; violently effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Bk2—29 to 33 inches; very pale brown (10YR 7/3) very cobbly loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine tubular pores; 20 percent carbonate finely disseminated throughout; 5 percent basalt gravel, 15 percent basalt cobbles, and 35 percent basalt stones; violently effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

2R—33 to 43 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Thickness of mollic epipedon: 10 to 14 inches
Depth to calcic horizon: 13 to 20 inches

A horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 16 percent
Content of rock fragments—5 to 15 percent gravel, 5 to 10 percent cobbles, and 20 to 35 percent stones
Reaction—pH 6.6 to 7.3

Bw horizon:

Organic matter content—0.5 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam
Content of clay—13 to 19 percent
Content of rock fragments—5 to 15 percent gravel, 5 to 30 percent cobbles, and 20 to 35 percent stones
Reaction—pH 6.6 to 7.6

Bk1 horizon:

Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—10 to 16 percent
Content of rock fragments—5 to 10 percent gravel, 15 to 35 percent cobbles, and 14 to 35 percent stones
Calcium carbonate equivalent—15 to 35 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bk2 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—11 to 15 percent

Content of rock fragments—5 to 10 percent gravel, 15 to 40 percent cobbles, and 20 to 40 percent stones
Calcium carbonate equivalent—15 to 35 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Portino Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Silty alluvium and loess over basalt
Slope range: 0 to 20 percent
Elevation: 4,200 to 5,150 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids

Typical Pedon

Portino silt loam, 2 to 4 percent slopes; about 11 miles northwest of American Falls, Idaho; about 375 feet south and 415 feet west of the northeast corner of section 24, T. 6 S., R. 29 E.; latitude 42 degrees 53 minutes 27.3 seconds north and longitude 113 degrees 0 minutes 33.8 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 6 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine interstitial pores; carbonate finely disseminated throughout; very slightly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
A2—6 to 12 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine interstitial pores; carbonate finely disseminated throughout; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.
Bk1—12 to 19 inches; very pale brown (10YR 8/2) silt loam, light gray (10YR 7/2) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.
Bk2—19 to 24 inches; very pale brown (10YR 8/2) silt loam, light brownish gray (10YR 6/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine tubular pores; carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
Bk3—24 to 34 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine interstitial pores; carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
2R—34 to 44 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Depth to calcic horizon: 8 to 15 inches

A horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 8 percent gravel and 0 to 15 percent cobbles
Calcium carbonate equivalent—5 to 15 percent
Sodium adsorption ratio—0 to 10
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 9.0

Bk horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 6 percent cobbles
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—2 to 13
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 9.0

Portneuf Series

Depth class: Deep and very deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Silty alluvium, loess, or lacustrine deposits over basalt
Slope range: 0 to 8 percent
Elevation: 4,200 to 4,700 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids

Typical Pedon

Portneuf silt loam, bedrock substratum, 0 to 2 percent slopes (fig. 18); about 14 miles northwest of American Falls, Idaho; about 660 feet east and 475 feet north of the southwest corner of section 13, T. 6 S., R. 29 E.; latitude 42 degrees 53 minutes 35.9 seconds north and longitude 113 degrees 1 minute 30.4 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 6 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial pores; carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.6); abrupt wavy boundary.
A2—6 to 9 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; slightly hard, friable, slightly

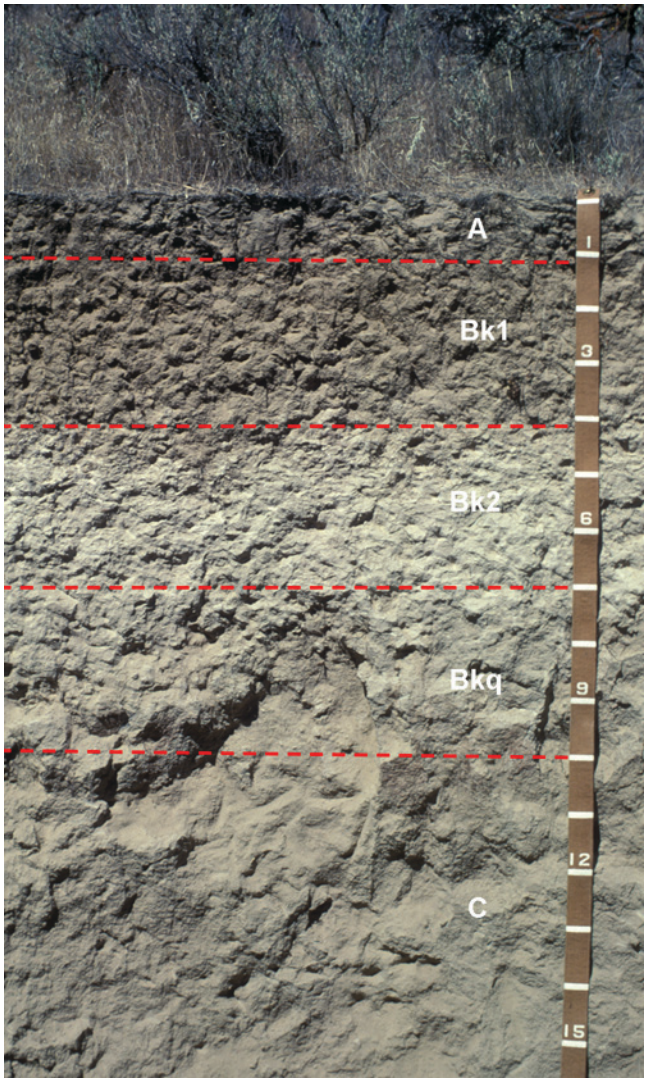


Figure 18.—Pedon of Portneuf silt loam. Portneuf soils generally are in the southern part of the survey area, where loess deposits are thicker. The numerals on the tape indicate decimeters.

sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial pores; carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.6); gradual smooth boundary.

Bw—9 to 15 inches; pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; carbonate finely disseminated throughout; slightly effervescent; slightly alkaline (pH 7.8); gradual wavy boundary.

Bkq—15 to 36 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine tubular pores; carbonate finely disseminated throughout; 20 percent hard, firm, brittle, calcareous cicada nodules; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk—36 to 57 inches; light brownish gray (10YR 6/2) silt loam, grayish brown (10YR 5/2) moist; massive; soft, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine interstitial pores; carbonate finely disseminated throughout; strongly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
2R—57 to 67 inches; basalt.

Range in Characteristics

Depth to restrictive features: 40 to 60 inches or more to lithic bedrock in some areas and none within a depth of 60 inches in some areas
Depth to calcic horizon: 8 to 15 inches

A horizon:
Organic matter content—0.6 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, fine sandy loam
Content of clay—5 to 18 percent
Calcium carbonate equivalent—0 to 15 percent
Reaction—pH 7.4 to 7.8

Bkq horizon:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—6 to 13 percent
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—2 to 10
Electrical conductivity (millimhos per centimeter)—2 to 8
Reaction—pH 7.8 to 9.0

Bk horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—5 to 12 percent
Calcium carbonate equivalent—15 to 30 percent
Sodium adsorption ratio—2 to 10
Electrical conductivity (millimhos per centimeter)—2 to 8
Reaction—pH 7.9 to 9.0

Povey Series

Depth class: Deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium over conglomerate, sandstone, siltstone, or quartzite
Slope range: 30 to 60 percent
Elevation: 5,200 to 8,600 feet
Mean annual precipitation: 16 to 24 inches
Mean annual air temperature: 36 to 41 degrees F
Frost-free period: 30 to 65 days

Taxonomic class: Loamy-skeletal, mixed, superactive Pachic Haplocryolls

Typical Pedon

Povey gravelly loam in an area of Povey-Dollarhide complex, 30 to 60 percent slopes; about 3 miles west and 1 mile south of Hailey, Idaho; about 2,760 feet south

and 900 feet west of the northeast corner of section 20, T. 2 N., R. 18 E.; latitude 43 degrees 29 minutes 29.2 seconds north and longitude 114 degrees 19 minutes 48.7 seconds west; NAD 83. (Colors are for moist soil unless otherwise noted.)

A1—0 to 8 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 20 percent gravel; neutral (pH 6.6); clear wavy boundary.

A2—8 to 14 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 20 percent gravel; neutral (pH 6.8); clear smooth boundary.

Bw1—14 to 21 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; 25 percent gravel and 10 percent cobbles; neutral (pH 6.8); gradual wavy boundary.

Bw2—21 to 35 inches; brown (10YR 4/3) very gravelly loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; 40 percent gravel and 15 percent cobbles; neutral (pH 6.8); gradual wavy boundary.

C—35 to 60 inches; brown (10YR 4/3) extremely cobbly loam, brown (10YR 5/3) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; 20 percent gravel and 50 percent cobbles; neutral (pH 7.0); abrupt wavy boundary.

2R—60 to 70 inches; quartzite.

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Thickness of mollic epipedon: 16 to 40 inches

A horizon:
- Organic matter content—2 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—10 to 20 percent
- Content of rock fragments—15 to 40 percent gravel
- Reaction—pH 6.6 to 7.3

Bw horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, fine sandy loam
- Content of clay—10 to 20 percent
- Content of rock fragments—25 to 45 percent gravel and 10 to 30 percent cobbles
- Reaction—pH 6.1 to 7.3

C horizon:
- Organic matter content—0.5 to 2.0 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam
- Content of clay—8 to 15 percent
- Content of rock fragments—10 to 25 percent gravel and 40 to 60 percent cobbles
- Reaction—pH 6.6 to 7.8

Power Series

Depth class: Very deep
Drainage class: Well drained

Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and loess
Slope range: 0 to 2 percent
Elevation: 4,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Xeric Calciargids

Typical Pedon

Power silt loam in an area of Farmell-Power-Playas complex, 0 to 2 percent slopes; about 2 miles south of Gooding, Idaho; about 1,280 feet east and 50 feet north of the southwest corner of section 17, T. 6 S., R. 15 E.; latitude 42 degrees 53 minutes 41.7 seconds north and longitude 114 degrees 42 minutes 28.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak thin and medium platy structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; few very fine and fine tubular and common very fine and fine interstitial pores; neutral (pH 6.8); clear smooth boundary.

BA—6 to 10 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine and fine and few medium tubular pores; 10 percent faint clay films on surfaces along pores; neutral (pH 6.6); gradual wavy boundary.

Bt—10 to 23 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and moderately plastic; common very fine, fine, and medium roots; common very fine and fine and few medium tubular pores; 35 percent faint clay films on surfaces along pores and 35 percent faint clay films on all faces of peds; neutral (pH 6.8); clear wavy boundary.

Bk—23 to 29 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial and few very fine and fine tubular pores; 15 percent carbonate finely disseminated throughout; slightly effervescent; neutral (pH 7.8); clear wavy boundary.

Bkq1—29 to 40 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine and fine tubular pores; 25 percent carbonate finely disseminated throughout and 15 percent coarse, weakly cemented insect casts throughout; violently effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

Bkq2—40 to 47 inches; very pale brown (10YR 7/3) very fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and few very fine and fine tubular pores; 25 percent carbonate finely disseminated throughout and 5 percent coarse, weakly cemented insect casts throughout; violently effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

Bkq3—47 to 64 inches; very pale brown (10YR 7/3) very fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and few very fine tubular pores; 25 percent carbonate finely disseminated throughout and 5 percent coarse, weakly cemented insect casts throughout; violently effervescent; moderately alkaline (pH 7.9).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 14 to 25 inches

A and BA horizons:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam
- Content of clay—18 to 22 percent
- Reaction—pH 6.6 to 7.8

Bt horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—silty clay loam, loam, silt loam
- Content of clay—24 to 35 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 6.6 to 7.8

Bk and Bkq1 horizons:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam
- Content of clay—18 to 27 percent
- Content of rock fragments—0 to 6 percent gravel
- Calcium carbonate equivalent—15 to 25 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Bkq2 and Bkq3 horizons:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, silt loam, very fine sandy loam
- Content of clay—15 to 20 percent
- Content of rock fragments—0 to 6 percent gravel
- Calcium carbonate equivalent—15 to 30 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Quincy Series

Depth class: Very deep
Drainage class: Excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Plains
Landform: Lava plains
Parent material: Mixed eolian sand and sandy alluvium
Slope range: 2 to 20 percent
Elevation: 3,200 to 4,600 feet
Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 53 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Mixed, mesic Xeric Torripsamments

Typical Pedon

Quincy fine sand (fig. 19) in an area of Portneuf-Quincy complex, 0 to 20 percent slopes; about 10.4 miles west of American Falls, Idaho, and about 2 miles northeast of the Quigley railroad siding; about 425 feet east and 290 feet south of the northwest corner of section 3, T. 8 S., R. 29 E.; latitude 42 degrees 45 minutes 41.8 seconds north and longitude 113 degrees 3 minutes 37.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

C1—0 to 10 inches; brown (10YR 5/3) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common fine and medium roots; many very fine interstitial pores; slightly alkaline (pH 7.4); gradual smooth boundary.

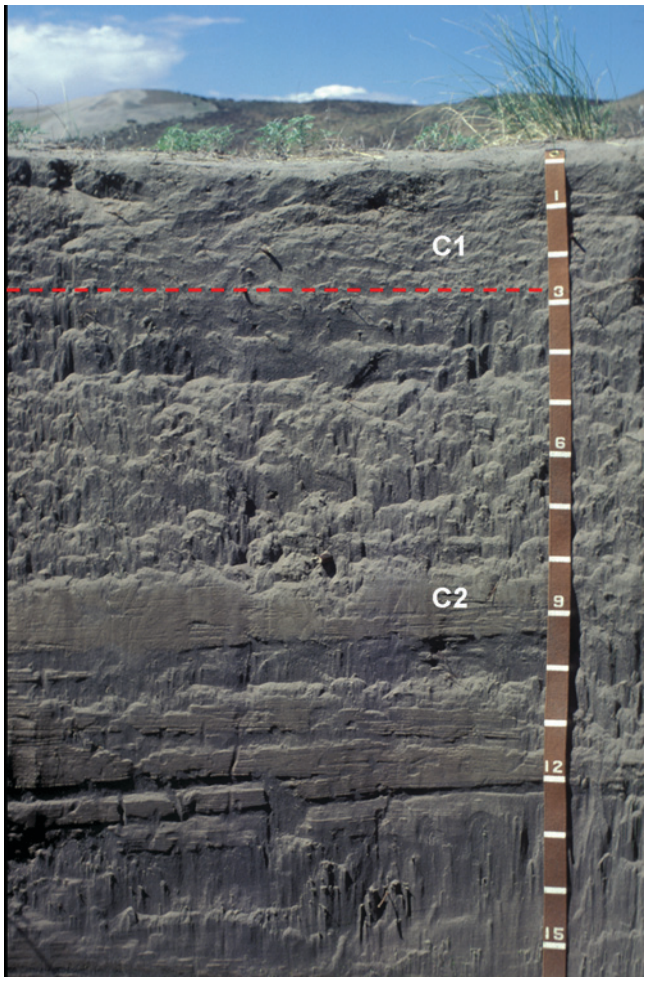


Figure 19.—Pedon of Quincy fine sand. Quincy soils generally are in the southern part of the survey area, where there was more stream-deposited sand that was redeposited by wind and water. The numerals on tape indicate decimeters.

C2—10 to 60 inches; grayish brown (10YR 5/2) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few fine roots; many very fine interstitial pores; slightly alkaline (pH 7.4).

Range in Characteristics

Depth to restrictive feature: More than 60 inches

C1 horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—fine sand
- Content of clay—1 to 6 percent
- Reaction—pH 6.6 to 7.8

C2 horizon:
- Organic matter content—0 to 1 percent
- Texture (fraction less than 2 millimeters in diameter)—loamy fine sand, fine sand, sand
- Content of clay—1 to 7 percent
- Calcium carbonate equivalent—2 to 5 percent
- Reaction—pH 7.4 to 7.8

Rehfield Series

Depth class: Deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and eolian deposits
Slope range: 1 to 8 percent
Elevation: 4,300 to 4,800 feet
Mean annual precipitation: 9 to 13 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 85 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ultic Argixerolls

Typical Pedon

Rehfield sandy loam in an area of Deerhorn-Rehfield-Rock outcrop complex, 2 to 15 percent slopes; about 16 miles east and 5 miles south of Carey, Idaho; about 3,000 feet north and 1,100 feet east of the southwest corner of section 17, T. 2 S., R. 24 E.; latitude 43 degrees 15 minutes 5.2 seconds north and longitude 113 degrees 37 minutes 47.4 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak medium and thick platy structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial pores; 5 percent gravel; neutral (pH 6.6); clear wavy boundary.

Bw—3 to 11 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common very fine tubular pores; 10 percent gravel; neutral (pH 6.8); clear wavy boundary.

Bt1—11 to 23 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and

coarse roots; common fine tubular pores; 5 percent faint clay films between sand grains; 5 percent gravel and 5 percent cobbles; neutral (pH 7.0); clear wavy boundary.

Bt2—23 to 42 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 5 percent faint clay films on all faces of peds, 5 percent faint clay films between sand grains, and 5 percent faint clay films on surfaces along pores; 5 percent gravel and 5 percent cobbles; neutral (pH 7.2); abrupt irregular boundary.

2C—42 to 67 inches; light yellowish brown (10YR 6/4) loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; few very fine tubular pores; 5 percent gravel; neutral (pH 7.2).

Range in Characteristics

Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 14 inches

A and Bw horizons:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loamy sand
Content of clay—4 to 10 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.3

Bt1 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam
Content of clay—12 to 15 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 3 percent cobbles
Reaction—pH 6.6 to 7.3

Bt2 horizon:

Organic matter content—none
Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam, sandy clay loam
Content of clay—18 to 31 percent
Content of rock fragments—0 to 6 percent gravel and 0 to 3 percent cobbles
Reaction—pH 6.6 to 7.3

2C horizon:

Organic matter content—none
Texture (fraction less than 2 millimeters in diameter)—very fine sandy loam, loamy sand
Content of clay—8 to 13 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.3

Rekima Series

Depth class: Shallow to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Lava plains

Landform: Buttes
Parent material: Mixed alluvium over basalt
Slope range: 2 to 15 percent
Elevation: 4,500 to 4,700 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 90 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic, shallow Xeric Haplodurids

Typical Pedon

Rekima very stony fine sandy loam in an area of Deerhorn-Wildors-Rekima complex, 2 to 15 percent slopes; about 2.5 miles south and 1 mile west of Wendell, Idaho; about 2,350 feet east and 2,050 feet south of the northwest corner of section 17, T. 8 S., R. 15 E.; latitude 42 degrees 44 minutes 1.7 seconds north and longitude 114 degrees 43 minutes 29.4 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches; brown (10YR 5/3) very stony fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; 15 percent basalt gravel, 10 percent basalt cobbles, and 15 percent basalt stones; neutral (pH 7.0); clear wavy boundary.

Bw1—3 to 6 inches; yellowish brown (10YR 5/4) very cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; many very fine and fine tubular pores; 10 percent basalt gravel, 25 percent basalt cobbles, and 10 percent basalt stones; neutral (pH 7.0); clear wavy boundary.

Bw2—6 to 15 inches; yellowish brown (10YR 5/4) very cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 10 percent basalt gravel, 25 percent basalt cobbles, and 5 percent basalt stones; neutral (pH 7.2); gradual wavy boundary.

Bkq—15 to 18 inches; brown (10YR 5/3) very cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots around fragments; common very fine and fine tubular pores; 10 percent carbonate finely disseminated throughout; 15 percent basalt gravel, 25 percent basalt cobbles, and 10 percent basalt stones; slightly effervescent; coatings of carbonate and silica on all sides of rock fragments; slightly alkaline (pH 7.4); abrupt wavy boundary.

Bkqm—18 to 19 inches; very pale brown (10YR 7/3) cemented material, pale brown (10YR 6/3) moist; violently effervescent; abrupt wavy boundary.

2R—19 to 29 inches; basalt.

Range in Characteristics

Depth to restrictive features: 14 to 19 inches to an indurated duripan and 15 to 20 inches to lithic bedrock

A horizon:

Organic matter content—0.7 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam
Content of clay—10 to 14 percent

Content of rock fragments—10 to 21 percent gravel, 0 to 17 percent cobbles, and 10 to 21 percent stones
Reaction—pH 6.6 to 7.3

Bw horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam
Content of clay—10 to 14 percent
Content of rock fragments—5 to 10 percent gravel, 15 to 30 percent cobbles, and 5 to 15 percent stones
Reaction—pH 6.6 to 7.3

Bkq horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam, loam
Content of clay—10 to 18 percent
Content of rock fragments—10 to 25 percent gravel, 15 to 35 percent cobbles, and 10 to 15 percent stones
Calcium carbonate equivalent—5 to 15 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Roundknoll Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Volcanic ash and/or cinders
Slope range: 2 to 30 percent
Elevation: 4,820 to 5,700 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Ashy-skeletal, glassy, frigid Typic Vitrixerands

Typical Pedon

Roundknoll gravelly ashy loamy sand, 2 to 20 percent slopes; about 1 mile east of Craters of the Moon National Monument Headquarters; 900 feet east and 1,900 feet south of the northwest corner of section 27, T. 2 N., R. 25 E.; latitude 43 degrees 28 minutes 23.6 seconds north and longitude 113 degrees 28 minutes 19.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; brown (10YR 5/3) gravelly ashy loamy sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; 15 percent indurated gravel-sized cinders; slightly alkaline (pH 7.5); clear smooth boundary.
A2—3 to 10 inches; yellowish brown (10YR 5/4) gravelly ashy loamy sand, dark yellowish brown (10YR 3/4) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 30 percent indurated gravel-sized cinders; slightly alkaline (pH 7.6); clear smooth boundary.

Bw—10 to 15 inches; brown (10YR 5/3) extremely gravelly ashy loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine and few medium interstitial pores; 60 percent indurated gravel-sized cinders; slightly alkaline (pH 7.6); clear smooth boundary.

Bk1—15 to 20 inches; brown (10YR 5/3) very gravelly ashy loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine, fine, and medium interstitial pores; carbonate coatings on rock fragments; 50 percent indurated gravel-sized cinders; violently effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bk2—20 to 30 inches; pale brown (10YR 6/3) extremely gravelly ashy loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine, fine, and medium interstitial pores; carbonate coatings on rock fragments; 60 percent indurated gravel-sized cinders; violently effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

Bk3—30 to 60 inches; pale brown (10YR 6/3) extremely gravelly ashy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine, fine, and medium interstitial pores; carbonate coatings on rock fragments; 80 percent indurated gravel-sized cinders; violently effervescent; moderately alkaline (pH 7.9).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Depth to calcic horizon: 10 to 20 inches
Thickness of andic soil properties: More than 60 inches

A1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—15 to 25 percent gravel
Reaction—pH 7.4 to 7.6

A2 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—20 to 30 percent gravel
Reaction—pH 7.4 to 7.6

Bw horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—45 to 64 percent gravel
Reaction—pH 7.4 to 7.6

Bk1 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—45 to 60 percent gravel
Calcium carbonate equivalent—15 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.0

Bk2 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loamy sand
Content of clay—1 to 4 percent
Content of rock fragments—50 to 64 percent gravel
Calcium carbonate equivalent—15 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bk3 horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—ashy sand
Content of clay—0 to 2 percent
Content of rock fragments—70 to 85 percent gravel
Calcium carbonate equivalent—15 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Silentcone Series

Depth class: Moderately deep to bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Lava fields
Parent material: Volcanic ash and/or cinders over basalt
Slope range: 2 to 15 percent
Elevation: 5,660 to 5,830 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Ashy-skeletal, glassy, frigid Humic Vitrixerands

Typical Pedon

Silentcone very gravelly ashy loam in an area of Treemold-Silentcone-Lava flows complex, 2 to 15 percent slopes; about 1 mile south of Craters of the Moon National Monument Headquarters; 500 feet south and 1,400 feet west of the northeast corner of section 25, T. 2 N., R. 24 E.; latitude 42 degrees 28 minutes 48.2 seconds north and longitude 113 degrees 32 minutes 27.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 35 percent indurated, gravel-sized cinders; neutral (pH 7.3); clear smooth boundary.

A2—4 to 10 inches; brown (10YR 4/3) very gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 35 percent indurated, gravel-sized cinders; slightly alkaline (pH 7.4); clear wavy boundary.

Bw—10 to 24 inches; brown (10YR 5/3) very gravelly ashy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and

slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 45 percent indurated, gravel-sized cinders; slightly alkaline (pH 7.4); clear wavy boundary.

2R—24 to 48 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 30 inches to lithic bedrock
Thickness of andic soil properties: 20 to 30 inches
Thickness of mollic epipedon: 7 to 12 inches

A1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loam
Content of clay—6 to 12 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.6 to 7.3

A2 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loam
Content of clay—4 to 10 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 7.4 to 7.8

Bw horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loam
Content of clay—4 to 10 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 7.4 to 7.8

Soelberg Series

Depth class: Moderately deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Mixed alluvium
Slope range: 0 to 4 percent
Elevation: 5,000 to 5,690 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 65 to 90 days

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Calciargidic Argixerolls

Typical Pedon

Soelberg loam in an area of Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes; about 3 miles south of Moore, Idaho; about 600 feet north and 700 feet east of the southwest corner of section 9, T. 4 N., R. 26 E.; latitude 43 degrees 41 minutes 0.3 seconds north and longitude 113 degrees 22 minutes 24.6 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic;

many fine and very fine roots; many very fine irregular pores; 3 percent gravel; neutral (pH 7.2); clear smooth boundary.

A2—3 to 10 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 2 percent gravel; neutral (pH 7.2); clear wavy boundary.

Bt1—10 to 17 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure parting to moderate fine subangular blocky; slightly hard, firm, slightly sticky and moderately plastic; common very fine, fine, and medium roots; common very fine irregular and tubular pores; 35 percent faint clay films on all faces of peds and 35 percent faint clay films on surfaces along pores; 1 percent gravel; slightly alkaline (pH 7.8); clear wavy boundary.

Bt2—17 to 28 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure parting to moderate fine subangular blocky; slightly hard, firm, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 15 percent faint clay films on all faces of peds and 15 percent faint clay films on surfaces along pores; 3 percent gravel; slightly alkaline (pH 7.8); clear wavy boundary.

Bk—28 to 36 inches; very pale brown (10YR 8/3) gravelly loam, pale brown (10YR 6/3) moist; moderate thin platy structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; common very fine irregular pores; 70 percent carbonate coatings on rock fragments; 30 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2Bkq—36 to 40 inches; brown (10YR 5/3) extremely gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine and very fine roots; common very fine tubular pores; 70 percent carbonate and silica coatings on rock fragments; 60 percent gravel and 5 percent cobbles; slightly effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

2Bq—40 to 60 inches; brown (10YR 5/3) extremely gravelly sand, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; few very fine roots; common very fine irregular pores; 70 percent silica coatings on rock fragments; 65 percent gravel and 5 percent cobbles; moderately alkaline (pH 7.9).

Range in Characteristics

Depth to restrictive feature: 30 to 40 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 12 inches

Depth to calcic horizon: 20 to 30 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—18 to 25 percent
Content of rock fragments—0 to 10 percent gravel
Reaction—pH 6.6 to 7.6

Bt horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam, clay loam
Content of clay—25 to 34 percent
Content of rock fragments—0 to 14 percent gravel
Reaction—pH 7.4 to 7.8

Bk horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 18 percent
Content of rock fragments—15 to 34 percent gravel and 2 to 5 percent cobbles
Calcium carbonate equivalent—15 to 25 percent
Reaction—pH 7.8 to 8.4

2Bkq horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loamy coarse sand, loamy sand, sand, coarse sand
Content of clay—0 to 2 percent
Content of rock fragments—50 to 75 percent gravel and 0 to 5 percent cobbles
Calcium carbonate equivalent—15 to 25 percent
Reaction—pH 7.8 to 8.4

2Bq horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loamy coarse sand, loamy sand, sand, coarse sand
Content of clay—0 to 2 percent
Content of rock fragments—50 to 80 percent gravel and 3 to 5 percent cobbles
Calcium carbonate equivalent—2 to 4 percent
Reaction—pH 7.8 to 8.0

Soen Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium
Slope range: 0 to 4 percent
Elevation: 4,480 to 5,680 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 70 to 90 days

Taxonomic class: Fine, smectitic, frigid Calcic Argixerolls

Typical Pedon

Soen clay loam, 0 to 4 percent slopes; about 3 miles southwest of Moore, Idaho; about 100 feet south and 700 feet west of the northeast corner of section 7, T. 4 N., R. 26 E.; latitude 43 degrees 41 minutes 45.8 seconds north and longitude 113 degrees 23 minutes 55.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 7 inches; brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and moderately plastic; many very fine and fine and few medium roots; common very fine and fine irregular pores; neutral (pH 7.2); clear smooth boundary.
Bt—7 to 17 inches; brown (10YR 4/3) silty clay loam, dark yellowish brown (10YR 4/4) moist; strong coarse angular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots; common very fine irregular pores;

70 percent distinct clay films on all faces of peds; slightly alkaline (pH 7.5); clear smooth boundary.

Btk—17 to 22 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common fine irregular pores; 15 percent faint clay films on all faces of peds; 1 percent threadlike carbonate masses; slightly effervescent; slightly alkaline (pH 7.5); clear smooth boundary.

Bk—22 to 60 inches; pale brown (10YR 6/3) silt loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; common fine irregular pores; 30 percent threadlike carbonate masses; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 7 to 15 inches
Depth to calcic horizon: 20 to 30 inches

A horizon:
- Organic matter content—1 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam
- Content of clay—28 to 35 percent
- Content of rock fragments—0 to 15 percent gravel and 0 to 6 percent cobbles
- Reaction—pH 6.6 to 7.6

Bt and Btk horizons:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—silty clay loam, clay, silty clay
- Content of clay—35 to 50 percent
- Content of rock fragments—0 to 9 percent gravel and 0 to 3 percent cobbles
- Reaction—pH 6.6 to 7.8

Bk horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—silt loam, sandy loam, loam
- Content of clay—15 to 25 percent
- Content of rock fragments—0 to 20 percent gravel
- Calcium carbonate equivalent—15 to 25 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Splittop Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Lava fields
Parent material: Eolian deposits over basalt
Slope range: 2 to 8 percent
Elevation: 4,600 to 5,500 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Coarse-silty, mixed, superactive, frigid Xeric Haplocalcids

Typical Pedon

The typical pedon for the Splittop series is from a map unit in the soil survey of Butte County Area, Idaho. This map unit is not part of the legend for the soil survey of Craters of the Moon National Monument and Preserve, Idaho.

Splittop loam in an area of Splittop-Coffee complex, 0 to 8 percent slopes; about 0.5 mile north of Coffee Point; about 2,000 feet north and 650 feet east of the southwest corner of section 27, T. 3 S., R. 30 E.; latitude 43 degrees 7 minutes 50.7 seconds north and longitude 112 degrees 56 minutes 41.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.

A—0 to 3 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; weak thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; many very fine vesicular pores; 10 percent basalt gravel; neutral (pH 7.2); abrupt smooth boundary.

Bw—3 to 8 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; few very fine tubular pores; 5 percent basalt gravel; very slightly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

Bk1—8 to 12 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine and common coarse roots; few very fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments and 1 percent coarse spherical carbonate nodules; 4 percent basalt gravel; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2—12 to 26 inches; very pale brown (10YR 8/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular pores; 35 percent carbonate coatings on bottom surface of rock fragments and 1 percent coarse spherical carbonate nodules; 5 percent basalt gravel; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk3—26 to 32 inches; very pale brown (10YR 8/2) loam, pale brown (10YR 6/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine irregular pores; 35 percent carbonate coatings on bottom surface of rock fragments and 1 percent medium and 1 percent coarse spherical carbonate nodules; 5 percent basalt gravel and 5 percent basalt cobbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

2R—32 to 42 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Depth of the calcic horizon: 8 to 15 inches

A and Bw horizons:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—18 to 25 percent
Content of rock fragments—0 to 10 percent gravel and 0 to 3 percent cobbles
Reaction—pH 6.6 to 7.6

Bk1 horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—20 to 27 percent

Content of rock fragments—0 to 6 percent gravel
Calcium carbonate equivalent—15 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Bk2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—20 to 27 percent
Content of rock fragments—0 to 10 percent gravel and 0 to 5 percent cobbles
Calcium carbonate equivalent—15 to 20 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Starbuck Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and eolian deposits over basalt
Slope range: 1 to 20 percent
Elevation: 3,400 to 4,700 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 120 days

Taxonomic class: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical Pedon

Starbuck very fine sandy loam in an area of Paulville-McPan-Starbuck complex, 1 to 8 percent slopes; about 5 miles west and 0.75 mile north of Wendell, Idaho; about 850 feet west and 800 feet north of the southeast corner of section 28, T. 7 S., R. 14 E.; latitude 42 degrees 47 minutes 6.3 seconds north and longitude 114 degrees 47 minutes 39.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 1 inch; brown (10YR 5/3) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak very fine and fine granular structure; slightly hard, very friable, nonsticky and slightly plastic; many very fine roots; many very fine and common fine interstitial pores; 1 percent basalt gravel; neutral (pH 6.6); abrupt smooth boundary.

A2—1 to 4 inches; yellowish brown (10YR 5/4) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine interstitial pores; 1 percent basalt gravel; neutral (pH 7.0); abrupt smooth boundary.

Bw1—4 to 10 inches; yellowish brown (10YR 5/4) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak very fine and fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial and few very fine tubular pores; 1 percent basalt gravel; neutral (pH 6.9); clear wavy boundary.

Bw2—10 to 17 inches; light yellowish brown (10YR 6/4) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very

fine roots; common very fine interstitial and few very fine tubular pores; 1 percent basalt gravel; slightly alkaline (pH 7.4); abrupt wavy boundary.
2R—17 to 27 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 12 to 20 inches to lithic bedrock

A horizon:
Organic matter content—0.7 to 2.0 percent
Texture (fraction less than 2 millimeters in diameter)—very fine sandy loam, silt loam
Content of clay—10 to 20 percent
Content of rock fragments—0 to 19 percent gravel and 0 to 28 percent cobbles
Reaction—pH 6.6 to 7.3

Bw1 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam, loam, very fine sandy loam
Content of clay—14 to 18 percent
Content of rock fragments—0 to 12 percent gravel and 0 to 3 percent cobbles
Reaction—pH 6.6 to 7.8

Bw2 horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam, very fine sandy loam, loam, silt loam
Content of clay—14 to 18 percent
Content of rock fragments—0 to 12 percent gravel and 0 to 6 percent cobbles
Reaction—pH 6.6 to 7.8

Sunsetcone Series

Depth class: Shallow and moderately deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Lava plains
Landform: Volcanic cones
Parent material: Tephra
Slope range: 30 to 60 percent
Elevation: 5,840 to 7,120 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 40 to 70 days

Taxonomic class: Medial over pumiceous or cindery, amorphic over glassy Humic Xeric Vitricryands

Typical Pedon

Sunsetcone gravelly medial loam, 30 to 60 percent slopes; about 0.5 mile north of Craters of the Moon National Monument Headquarters; 1,900 feet north and 2,000 feet east of the southwest corner of section 26, T. 2 N., R. 24 E.; latitude 43 degrees 28 minutes 20.1 seconds north and longitude 113 degrees 34 minutes 3.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch; slightly decomposed plant material.
Oe—1 to 2 inches; moderately decomposed plant material.
A1—2 to 6 inches; brown (10YR 4/3) gravelly medial loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; many very fine interstitial pores; 20 percent gravel-sized cinders; moderately alkaline (pH 7.9); clear smooth boundary.
A2—6 to 8 inches; dark grayish brown (10YR 4/2) gravelly medial loam, black (10YR 2/1) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 15 percent gravel-sized cinders; moderately alkaline (pH 7.9); gradual wavy boundary.
AB—8 to 12 inches; brown (10YR 5/3) very gravelly medial loam, black (10YR 2/1) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 35 percent gravel-sized cinders; moderately alkaline (pH 7.9); gradual smooth boundary.
Bw—12 to 26 inches; brownish yellow (10YR 6/6) very gravelly medial sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; common very fine tubular pores; 35 percent gravel-sized cinders; moderately alkaline (pH 8.0); abrupt wavy boundary.
2C1—26 to 32 inches; dark brown (10YR 3/3) cinders, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine and common medium and coarse roots; common medium and coarse interstitial pores; 20 percent gravel-sized cinders and 70 percent cobble-sized cinders; gradual wavy boundary.
2C2—32 to 60 inches; dark brown (10YR 3/3) cinders, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; many very fine, fine, and medium and few coarse interstitial pores; 85 percent gravel-sized cinders and 10 percent cobble-sized cinders.

Range in Characteristics

Depth to restrictive feature: 14 to 40 inches to strongly contrasting textural stratification
Thickness of mollic epipedon: 7 to 15 inches
Thickness of andic soil properties: 14 to 40 inches

Oi horizon:
Organic matter content—60 to 95 percent
Texture—slightly decomposed plant material

Oe horizon:
Organic matter content—60 to 95 percent
Texture—moderately decomposed plant material

A1 horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—8 to 15 percent
Content of rock fragments—15 to 25 percent gravel
Reaction—pH 7.9 to 8.4

A2 horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam

Content of clay—8 to 12 percent
Content of rock fragments—15 to 25 percent gravel
Reaction—pH 7.9 to 8.4

AB horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—medial loam
Content of clay—8 to 12 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 7.9 to 8.4

Bw horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—medial sandy loam
Content of clay—4 to 6 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 7.9 to 8.4

2C1 horizon:
Organic matter content—none
Texture—cinders, dominantly cobble sized
Content of clay—0 to 1 percent
Content of rock fragments—15 to 25 percent gravel and 60 to 85 percent cobbles
Reaction—pH 6.6 to 7.3

2C2 horizon:
Organic matter content—none
Texture—cinders, dominantly gravel sized
Content of clay—0 to 1 percent
Content of rock fragments—80 to 95 percent gravel and 5 to 20 percent cobbles
Reaction—pH 6.6 to 7.3

Taunton Series

Depth class: Moderately deep to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Lava plains
Landform: Buttes
Parent material: Mixed alluvium and eolian deposits over basalt
Slope range: 2 to 15 percent
Elevation: 4,000 to 4,600 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 95 to 120 days

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Xeric Haplodurids

Typical Pedon

Taunton silt loam in an area of detailed soil map unit 191 from the soil survey of Wood River Area, Idaho. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; brown (10YR 5/3) silt loam; strong thick platy structure parting to moderate fine subangular blocky; 2 percent fine gravel; neutral (pH 7.2).
Bk—5 to 32 inches; yellowish brown (10YR 5/6) loam; strong fine subangular blocky structure; 8 percent gravel and 3 percent cobbles; strongly effervescent; moderately alkaline (pH 7.9).

Bkqm—32 to 44 inches; very pale brown (10YR 7/3) cemented material.
2R—44 to 54 inches; basalt.

Range in Characteristics

Depth to restrictive features: 22 to 38 inches to an indurated duripan and 42 to 60 inches to lithic bedrock
Depth to calcic horizon: 5 to 15 inches

A horizon:
Organic matter content—0.7 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—silt loam
Content of clay—15 to 20 percent
Content of rock fragments—0 to 3 percent gravel
Reaction—pH 6.6 to 7.6

Bk horizon:
Organic matter content—0 to 0.50 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam, sandy loam, loam
Content of clay—10 to 18 percent
Content of rock fragments—0 to 15 percent gravel and 0 to 6 percent cobbles
Calcium carbonate equivalent—5 to 35 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Techick Series

Depth class: Deep to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Valleys
Landform: Fan remnants
Parent material: Mixed alluvium
Slope range: 0 to 4 percent
Elevation: 5,000 to 5,690 feet
Mean annual precipitation: 11 to 13 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 65 to 90 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls

Typical Pedon

Techick loam in an area of Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes; about 1.5 miles southeast of Arco, Idaho; about 1,800 feet south and 2,000 feet east of the northwest corner of section 11, T. 3 N., R. 26 E.; latitude 43 degrees 36 minutes 16.6 seconds north and longitude 113 degrees 19 minutes 43.8 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; many very fine and common fine roots; many very fine irregular pores; 10 percent basalt gravel; neutral (pH 7.2); abrupt smooth boundary.
Bt—4 to 12 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and moderately plastic; common very fine, fine, and medium roots; common very fine irregular and tubular pores; 35 percent prominent clay films on all faces of

peds and 35 percent prominent clay films on surfaces along pores; slightly alkaline (pH 7.4); clear wavy boundary.

Btk—12 to 25 inches; very pale brown (10YR 8/3) clay loam, pale brown (10YR 6/3) moist; moderate fine subangular blocky structure; hard, firm, slightly sticky and moderately plastic; common very fine, fine, and medium roots; common very fine irregular pores; 15 percent distinct clay films on all faces of peds; 10 percent medium carbonate masses; strongly effervescent; moderately alkaline (pH 7.9); gradual wavy boundary.

Bk—25 to 46 inches; very pale brown (10YR 7/3) loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate medium prismatic; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine irregular pores; 35 percent prominent carbonate coatings on all faces of peds and 35 percent prominent carbonate coatings on surfaces along root channels; 5 percent basalt gravel; strongly effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary.

2Bq—46 to 60 inches; grayish brown (10YR 5/2) extremely gravelly sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 35 percent silica coatings on bottom surface of rock fragments; 55 percent basalt gravel and 5 percent basalt cobbles; slightly alkaline (pH 7.8).

Range in Characteristics

Depth to restrictive feature: 40 to 50 inches to strongly contrasting textural stratification

Thickness of mollic epipedon: 10 to 12 inches

Depth to calcic horizon: 10 to 15 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—10 to 20 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 6.6 to 7.7

Bt horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, silty clay loam, loam
Content of clay—25 to 35 percent
Content of rock fragments—0 to 15 percent gravel
Reaction—pH 7.4 to 7.7

Btk horizon:

Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, silty clay loam, loam
Content of clay—25 to 35 percent
Content of rock fragments—0 to 15 percent gravel
Calcium carbonate equivalent—15 to 20 percent
Reaction—pH 7.8 to 8.4

Bk horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam
Content of clay—10 to 20 percent
Content of rock fragments—5 to 20 percent gravel
Calcium carbonate equivalent—15 to 25 percent

Sodium adsorption ratio—0 to 1
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

2Bq horizon:
Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—sand, loamy sand
Content of clay—0 to 3 percent
Content of rock fragments—40 to 60 percent gravel and 0 to 10 percent cobbles
Reaction—pH 7.4 to 7.8

Techicknot Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium
Slope range: 0 to 12 percent
Elevation: 4,500 to 5,800 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 70 to 100 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls

Typical Pedon

Techicknot loam in an area of Nargon-Atom-Techicknot complex, 0 to 20 percent slopes; about 7 miles south of Arco, Idaho; about 75 feet south and 2,000 feet west of the northeast corner of section 1, T. 2 N., R. 26 E.; latitude 43 degrees 32 minutes 13.1 seconds north and longitude 113 degrees 18 minutes 13.7 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular pores; 2 percent basalt gravel; slightly alkaline (pH 7.4); clear smooth boundary.

Bt1—4 to 12 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; 15 percent faint clay films on all faces of peds; 3 percent basalt gravel; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2—12 to 29 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; weak medium prismatic structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky and moderately plastic; common very fine and fine roots; common very fine irregular and tubular pores; 15 percent faint clay films on all faces of peds; 3 percent basalt gravel; slightly alkaline (pH 7.6); clear smooth boundary.

Bk1—29 to 48 inches; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; 25 percent carbonate finely disseminated throughout and 30 percent coarse, spherical, moderately cemented carbonate nodules throughout; 3 percent basalt gravel; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk2—48 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, friable, moderately sticky and slightly plastic; few very fine roots; common very fine tubular pores; 20 percent carbonate finely disseminated throughout; 5 percent basalt gravel; strongly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 10 to 15 inches
Depth to calcic horizon: 20 to 30 inches

A horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—20 to 25 percent
- Content of rock fragments—0 to 5 percent gravel
- Reaction—pH 7.4 to 7.7

Bt horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silty clay loam, loam
- Content of clay—25 to 35 percent
- Content of rock fragments—0 to 10 percent gravel
- Reaction—pH 7.4 to 7.7

Bk1 horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—silty clay loam, clay loam, silt loam, loam
- Content of clay—22 to 35 percent
- Content of rock fragments—0 to 15 percent gravel
- Calcium carbonate equivalent—15 to 30 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.8 to 8.4

Bk2 horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—clay loam, silt loam, loam, silty clay loam
- Content of clay—20 to 30 percent
- Content of rock fragments—0 to 15 percent gravel
- Calcium carbonate equivalent—15 to 30 percent
- Sodium adsorption ratio—0 to 5
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 8.0 to 9.0

Tenno Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Loess over basalt

Slope range: 0 to 60 percent
Elevation: 4,600 to 5,200 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 80 to 110 days

Taxonomic class: Loamy, mixed, superactive, frigid Lithic Xeric Haplocambids

Typical Pedon

Tenno very stony loam in an area of Rock outcrop-Tenno, very stony complex, 0 to 20 percent slopes; about 3 miles north of Mosby's Well; about 2,125 feet south and 800 feet east of the northwest corner of section 5, T. 4 S., R. 29 E.; latitude 43 degrees 6 minutes 18.0 seconds north and longitude 113 degrees 6 minutes 12.4 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; brown (10YR 5/3) and pale brown (10YR 6/3) very stony loam, dark brown (10YR 3/3) and dark grayish brown (10YR 4/2) moist; weak medium platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots around fragments; many very fine and fine vesicular pores; 1 percent basalt gravel, 2 percent basalt cobbles, and 2 percent basalt stones; slightly alkaline (pH 7.6); clear smooth boundary.

A2—3 to 8 inches; pale brown (10YR 6/3) and brown (10YR 5/3) loam, dark grayish brown (10YR 4/2) and dark brown (10YR 3/3) moist; weak thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots around fragments; common very fine and fine vesicular pores; 1 percent basalt gravel, 2 percent basalt cobbles, and 2 percent basalt stones; slightly alkaline (pH 7.6); clear smooth boundary.

Bw—8 to 14 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and fine vesicular pores; 2 percent basalt gravel, 3 percent basalt cobbles, and 3 percent basalt stones; slightly alkaline (pH 7.6); clear irregular boundary.

Bk—14 to 17 inches; light brownish gray (10YR 6/2) stony loam, dark grayish brown (10YR 4/2) moist; weak medium platy structure; hard, firm, slightly sticky and slightly plastic; few fine and medium roots around fragments; few very fine tubular pores; 5 percent basalt gravel, 5 percent basalt cobbles, and 15 percent basalt stones; slightly effervescent; moderately alkaline (pH 8.0); abrupt irregular boundary.

2R—17 to 27 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Depth to secondary carbonates: 10 to 20 inches

A horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—8 to 18 percent
Content of rock fragments—0 to 10 percent gravel, 0 to 10 percent cobbles, and 0 to 2 percent stones
Sodium adsorption ratio—0 to 8
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 8.4

Bw horizon:

Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam

Content of clay—8 to 18 percent
Content of rock fragments—2 to 10 percent gravel, 0 to 6 percent cobbles, and 0 to 15 percent stones
Sodium adsorption ratio—0 to 8
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.4 to 8.4

Bk horizon:
Thickness—3 to 6 inches
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—8 to 18 percent
Content of rock fragments—2 to 10 percent gravel, 5 to 9 percent cobbles, and 5 to 15 percent stones
Calcium carbonate equivalent—5 to 20 percent
Sodium adsorption ratio—0 to 8
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 9.0

Treemold Series

Depth class: Very shallow to bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Lava plains
Landform: Lava fields
Parent material: Volcanic ash and/or cinders over basalt
Slope range: 2 to 15 percent
Elevation: 5,660 to 5,830 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 60 to 90 days

Taxonomic class: Ashy-skeletal, glassy, frigid Lithic Vitrixerands

Typical Pedon

Treemold very gravelly ashy loam in an area of Treemold-Silentcone-Lava flows complex, 2 to 15 percent slopes; about 1.6 miles northeast of Craters of the Moon National Monument Headquarters; 825 feet south and 1,110 feet west of the northeast corner of section 25, T. 2 N., R. 24 E.; latitude 43 degrees 28 minutes 45.4 seconds north and longitude 113 degrees 32 minutes 23.0 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; brown (10YR 4/3) very gravelly ashy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 40 percent indurated gravel-sized cinders; slightly acid (pH 6.2); clear smooth boundary.
Bw—2 to 9 inches; yellowish brown (10YR 5/4) very gravelly ashy sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many fine and very fine tubular pores; 45 percent indurated gravel-sized cinders; slightly acid (pH 6.4); gradual wavy boundary.
2R—9 to 19 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 4 to 10 inches to lithic bedrock.
Thickness of andic soil properties: 4 to 10 inches

A horizon:
Organic matter content—2 to 4 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loam
Content of clay—6 to 12 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.1 to 6.5

Bw horizon:
Organic matter content—1 to 2 percent
Texture (fraction less than 2 millimeters in diameter)—ashy loam, ashy sandy loam
Content of clay—6 to 12 percent
Content of rock fragments—35 to 45 percent gravel
Reaction—pH 6.2 to 6.5

Trevino Series

Depth class: Shallow to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and loess over basalt
Slope range: 0 to 20 percent
Elevation: 4,200 to 5,150 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids

Typical Pedon

Trevino stony loam (fig. 20) in an area of Portino-Trevino-Rock outcrop complex, 0 to 12 percent slopes; about 8 miles north of Quigley, Idaho; about 325 feet south and 320 feet west of the northeast corner of section 6, T. 7 S., R. 29 E.; latitude 42 degrees 50 minutes 51.8 seconds north and longitude 113 degrees 6 minutes 9.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches; light brownish gray (10YR 6/2) stony loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots around fragments; many very fine and fine interstitial pores; 10 percent basalt cobbles and 10 percent basalt stones; neutral (pH 7.2); gradual smooth boundary.

Bw—6 to 12 inches; light brownish gray (10YR 6/2) stony loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots around fragments; many very fine interstitial pores; 15 percent basalt stones; slightly alkaline (pH 7.4); gradual wavy boundary.

Bk1—12 to 16 inches; light gray (10YR 7/2) stony loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and

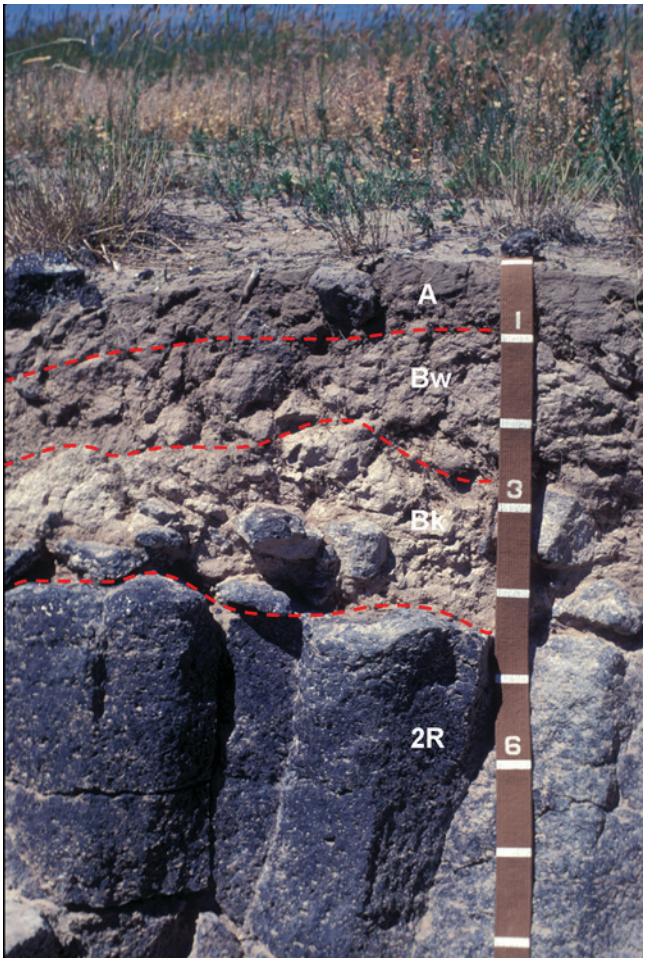


Figure 20.—Pedon of Trevino stony loam. Trevino soils generally are near areas of Rock outcrop and on more recent pahoehoe flows, where loess and mixed alluvial deposits are less than 20 inches thick to bedrock. The numerals on tape indicate decimeters.

slightly plastic; common fine and medium roots around fragments; common very fine and fine tubular pores; carbonate finely disseminated in matrix; 15 percent basalt stones; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk2—16 to 19 inches; light gray (10YR 7/2) stony loam, grayish brown (10YR 5/2) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine and medium roots around fragments; common very fine and fine tubular pores; carbonate finely disseminated in matrix and 1 percent fine irregular moderately cemented carbonate masses in matrix; 15 percent basalt stones; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2R—19 to 29 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Depth to carbonates: 8 to 15 inches

A horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam

Content of clay—12 to 18 percent
Content of rock fragments—0 to 8 percent gravel and 3 to 23 percent stones
Reaction—pH 6.6 to 7.6

Bw horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—12 to 18 percent
Content of rock fragments—0 to 8 percent gravel and 3 to 23 percent stones
Reaction—pH 6.6 to 7.6

Bk horizon:
Organic matter content—0.5 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loam, silt loam
Content of clay—12 to 18 percent
Content of rock fragments—0 to 18 percent gravel, 0 to 3 percent cobbles, and 0 to 15 percent stones
Calcium carbonate equivalent—5 to 15 percent
Sodium adsorption ratio—0 to 5
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Vining Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Plains
Landform: Lava plains
Parent material: Mixed alluvium and eolian deposits over basalt
Slope range: 0 to 12 percent
Elevation: 2,800 to 5,070 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 95 to 140 days

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids

Typical Pedon

Vining fine sandy loam in an area of Vining-Kecko-Rock outcrop complex, 2 to 12 percent slopes; about 4 miles south and 4 miles east of Minidoka, Idaho; about 2,500 feet north and 800 feet east of the southwest corner of section 21, T. 8 S., R. 26 E.; latitude 42 degrees 42 minutes 40.1 seconds north and longitude 113 degrees 25 minutes 47.2 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine irregular pores; 5 percent basalt gravel; neutral (pH 6.8); abrupt wavy boundary.
A2—2 to 6 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; many very fine and fine irregular pores; 5 percent basalt gravel; neutral (pH 7.0); gradual wavy boundary.
Bw—6 to 20 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard,

friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine irregular pores; 5 percent basalt gravel and 5 percent basalt cobbles; slightly alkaline (pH 7.4); gradual wavy boundary.

C—20 to 24 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine tubular and irregular pores; 5 percent basalt gravel and 5 percent basalt cobbles; slightly alkaline (pH 7.4); abrupt irregular boundary.

2R—24 to 34 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

A horizon:

Organic matter content—0.7 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam
Content of clay—6 to 15 percent
Content of rock fragments—0 to 15 percent gravel, 0 to 6 percent cobbles, and 0 to 3 percent stones
Reaction—pH 6.6 to 7.6

Bw horizon:

Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—fine sandy loam, sandy loam
Content of clay—7 to 18 percent
Content of rock fragments—0 to 9 percent gravel, 3 to 10 percent cobbles, and 0 to 8 percent stones
Reaction—pH 6.6 to 7.6

C horizon:

Organic matter content—0 to 0.2 percent
Texture (fraction less than 2 millimeters in diameter)—sandy loam
Content of clay—4 to 10 percent
Content of rock fragments—0 to 15 percent gravel and 0 to 10 percent cobbles
Reaction—pH 6.6 to 7.6

Vitale Series

Depth class: Moderately deep to bedrock
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately low
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium over sandstone, conglomerate, or siltstone
Slope range: 30 to 60 percent
Elevation: 5,000 to 8,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 50 to 90 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls

Typical Pedon

Vitale very cobbly loam in an area of Lavacreek-Vitale association, 30 to 60 percent slopes; about 2 miles north of Craters of the Moon National Monument Headquarters; 385 feet east and 1,855 feet south of the northwest corner of section 23, T. 2 N.,

R. 24 E.; latitude 43 degrees 29 minutes 26 seconds north and longitude 113 degrees 34 minutes 26 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; grayish brown (10YR 5/2) very cobbly loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine tubular pores; 25 percent gravel, 25 percent cobbles, and 2 percent stones; neutral (pH 6.8); clear smooth boundary.

A2—3 to 10 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine tubular pores; 20 percent gravel, 20 percent cobbles, and 1 percent stones; neutral (pH 6.9); clear wavy boundary.

Bt1—10 to 19 inches; brown (10YR 5/3) very cobbly clay loam, dark yellowish brown (10YR 3/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; many fine tubular pores; 35 percent faint clay films on all faces of peds and 35 percent faint clay films on surfaces along pores; 15 percent gravel, 40 percent cobbles, and 1 percent stones; neutral (pH 7.0); gradual wavy boundary.

Bt2—19 to 24 inches; brown (7.5YR 5/2) very cobbly clay loam, dark brown (7.5YR 3/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine tubular pores; 35 percent faint clay films on all faces of peds and 35 percent faint clay films on surfaces along pores; 15 percent gravel, 40 percent cobbles, and 1 percent stones; neutral (pH 7.2); gradual wavy boundary.

Bt3—24 to 33 inches; light brown (7.5YR 6/4) very cobbly loam, dark brown (7.5YR 3/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 35 percent faint clay films on all faces of peds and 35 percent faint clay films on surfaces along pores; 15 percent gravel, 40 percent cobbles, and 4 percent stones; neutral (pH 7.3); abrupt wavy boundary.

R—33 to 43 inches; siltstone.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Thickness of mollic epipedon: 7 to 13 inches

A1 horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—12 to 25 percent
Content of rock fragments—15 to 33 percent gravel, 15 to 33 percent cobbles, and 2 to 5 percent stones
Reaction—pH 6.1 to 7.3

A2 horizon:

Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, loam
Content of clay—24 to 30 percent
Content of rock fragments—15 to 33 percent gravel, 15 to 33 percent cobbles, and 1 to 5 percent stones
Reaction—pH 6.6 to 7.8

Bt1 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, loam
Content of clay—25 to 35 percent
Content of rock fragments—14 to 40 percent gravel, 9 to 45 percent cobbles, and 1 to 5 percent stones
Reaction—pH 6.6 to 7.8

Bt2 horizon:
Organic matter content—1 to 3 percent
Texture (fraction less than 2 millimeters in diameter)—clay loam, loam
Content of clay—25 to 35 percent
Content of rock fragments—14 to 40 percent gravel, 9 to 45 percent cobbles, and 1 to 5 percent stones
Reaction—pH 6.6 to 7.8

Bt3 horizon:
Organic matter content—0 to 1 percent
Texture (fraction less than 2 millimeters in diameter)—loam
Content of clay—18 to 25 percent
Content of rock fragments—14 to 40 percent gravel, 9 to 45 percent cobbles, and 1 to 5 percent stones
Reaction—pH 6.6 to 7.8

Walco Series

Depth class: Moderately deep to bedrock
Drainage class: Excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Plains
Landform: Lava plains
Parent material: Eolian deposits over basalt
Slope range: 4 to 12 percent
Elevation: 3,200 to 4,500 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Mixed, mesic Xeric Torripsamments

Typical Pedon

Walco fine sand in an area of Quincy-Walco complex, 2 to 12 percent slopes; about 3 miles south and 1 mile east of Wendell, Idaho; about 1,650 feet west and 75 feet south of the northeast corner of section 22, T. 8 S., R. 15 E.; latitude 42 degrees 43 minutes 27.4 seconds north and longitude 114 degrees 40 minutes 50.3 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch; brown (10YR 5/3) fine sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; many very fine and fine irregular pores; 1 percent basalt gravel; neutral (pH 7.0); abrupt wavy boundary.

C1—1 to 13 inches; yellowish brown (10YR 5/4) fine sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; many very fine and fine irregular pores; 1 percent basalt gravel; neutral (pH 7.0); gradual wavy boundary.

C2—13 to 18 inches; yellowish brown (10YR 5/4) loamy fine sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium and coarse roots; many very fine and fine irregular pores; 1 percent basalt gravel; neutral (pH 7.2); clear wavy boundary.

C3—18 to 21 inches; yellowish brown (10YR 5/4) loamy fine sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine and fine irregular pores; 2 percent basalt gravel and 5 percent basalt cobbles; neutral (pH 7.2); abrupt wavy boundary.

2R—21 to 31 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

A and C1 horizons:

Organic matter content—0.7 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—fine sand
Content of clay—0 to 5 percent
Content of rock fragments—0 to 5 percent gravel
Reaction—pH 6.6 to 7.3

C2 and C3 horizons:

Organic matter content—0 to 0.5 percent
Texture (fraction less than 2 millimeters in diameter)—loamy fine sand, loamy sand, fine sand
Content of clay—0 to 5 percent
Content of rock fragments—0 to 5 percent gravel and 0 to 5 percent cobbles
Reaction—pH 6.6 to 7.3

Wapi Series

Depth class: Shallow to bedrock
Drainage class: Excessively drained
Capacity of the most limiting soil layer to transmit water (Ksat): High
Landscape: Plains
Landform: Lava plains
Parent material: Eolian sand over basalt
Slope range: 0 to 12 percent
Elevation: 4,200 to 5,070 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 140 days

Taxonomic class: Mixed, mesic Lithic Xeropsamments

Typical Pedon

Wapi loamy fine sand in an area of Vining-Wapi-Rock outcrop complex, 0 to 12 percent slopes; about 1.6 miles northeast of Bonanza Lake; about 2,300 feet south and 1,880 feet west of the northeast corner of section 15, T. 8 S., R. 29 E.; latitude 42 degrees 43 minutes 37.1 seconds north and longitude 113 degrees 2 minutes 57.5 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; weak fine subangular blocky structure parting to weak fine granular; soft, very friable,

nonsticky and nonplastic; many very fine and fine and few medium roots; many fine interstitial pores; slightly alkaline (pH 7.4); abrupt smooth boundary.
C1—5 to 10 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many fine interstitial pores; slightly alkaline (pH 7.4); clear smooth boundary.
C2—10 to 16 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many fine interstitial pores; slightly alkaline (pH 7.8); abrupt wavy boundary.
C3—16 to 19 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; slightly alkaline (pH 7.8); abrupt wavy boundary.
2R—19 to 29 inches; basalt.

Range in Characteristics

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

A horizon:
Organic matter content—0.5 to 1.5 percent
Texture (fraction less than 2 millimeters in diameter)—loamy fine sand
Content of clay—2 to 8 percent
Content of rock fragments—0 to 3 percent gravel and 0 to 2 percent cobbles
Reaction—pH 6.6 to 7.6

C horizon:
Organic matter content—0.4 to 1.0 percent
Texture (fraction less than 2 millimeters in diameter)—loamy fine sand
Content of clay—2 to 8 percent
Content of rock fragments—0 to 3 percent gravel and 0 to 2 percent cobbles
Reaction—pH 6.6 to 7.8

Wildors Series

Depth class: Moderately deep to a duripan
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Very low
Landscape: Lava plains
Landform: Buttes
Parent material: Eolian deposits over a duripan over basalt
Slope range: 2 to 15 percent
Elevation: 4,500 to 5,000 feet
Mean annual precipitation: 8 to 13 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 90 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Haploduridic Durixerolls

Typical Pedon

Wildors very stony sandy loam in an area of Deerhorn-Wildors-Rekima complex, 2 to 15 percent slopes; about 7 miles south and 15 miles east of Carey, Idaho; about 1,200 feet south and 300 feet east of the northwest corner of section 30, T. 2 S., R. 24 E.; latitude 43 degrees 13 minutes 31.6 seconds north and longitude 113 degrees 39 minutes 14.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches; brown (10YR 5/3) very stony sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots around fragments; many very fine and fine interstitial pores; 10 percent basalt gravel, 10 percent basalt cobbles, and 30 percent basalt stones; neutral (pH 7.0); clear wavy boundary.

Bw1—2 to 9 inches; yellowish brown (10YR 5/4) very stony sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots around fragments; common very fine and fine interstitial pores; 10 percent basalt gravel, 10 percent basalt cobbles, and 30 percent basalt stones; neutral (pH 7.2); gradual wavy boundary.

Bw2—9 to 15 inches; yellowish brown (10YR 5/4) extremely stony loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots around fragments; few very fine and fine tubular pores; 10 percent basalt gravel, 15 percent basalt cobbles, and 40 percent basalt stones; slightly alkaline (pH 7.4); abrupt wavy boundary.

Bkq—15 to 21 inches; light yellowish brown (10YR 6/4) extremely stony loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots around fragments; few very fine and fine tubular pores; 10 percent weakly cemented carbonate masses throughout; 10 percent basalt gravel, 15 percent basalt cobbles, and 40 percent basalt stones; coatings of carbonate and silica on all sides of rock fragments; slightly alkaline (pH 7.8); abrupt wavy boundary.

Bkqm—21 to 24 inches; very pale brown (10YR 7/3) cemented material, pale brown (10YR 6/3) moist; violently effervescent; abrupt wavy boundary.

2R—24 to 34 inches; basalt.

Range in Characteristics

Depth to restrictive features: 21 to 28 inches to an indurated duripan and 23 to 30 inches to lithic bedrock

Thickness of mollic epipedon: 7 to 11 inches

Depth to secondary carbonates: 10 to 20 inches

A and Bw1 horizons:

- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam
- Content of clay—10 to 17 percent
- Content of rock fragments—1 to 15 percent gravel, 3 to 15 percent cobbles, and 14 to 35 percent stones
- Calcium carbonate equivalent—0 to 5 percent
- Reaction—pH 6.6 to 7.8

Bw2 horizon:

- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy loam, loam
- Content of clay—8 to 20 percent
- Content of rock fragments—4 to 15 percent gravel, 6 to 15 percent cobbles, and 9 to 40 percent stones
- Calcium carbonate equivalent—0 to 5 percent
- Electrical conductivity (millimhos per centimeter)—0 to 2
- Reaction—pH 7.4 to 8.2

Bkq horizon:

- Thickness—3 to 6 inches
- Organic matter content—0 to 0.5 percent

Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam
Content of clay—8 to 20 percent
Content of rock fragments—4 to 15 percent gravel, 6 to 15 percent cobbles, and 9 to 40 percent stones
Calcium carbonate equivalent—10 to 25 percent
Electrical conductivity (millimhos per centimeter)—0 to 2
Reaction—pH 7.8 to 8.4

Zeebar Series

Depth class: Very deep
Drainage class: Well drained
Capacity of the most limiting soil layer to transmit water (Ksat): Moderately high
Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous rock
Slope range: 15 to 50 percent
Elevation: 5,000 to 9,000 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 36 to 37 degrees F
Frost-free period: 10 to 60 days

Taxonomic class: Loamy-skeletal, mixed, superactive Xeric Argicryolls

Typical Pedon

Zeebar gravelly loam in an area of Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes; Hawley Mountain; about 300 feet north and 1,300 feet east of the southwest corner of section 10, T. 9 N., R. 26 E.; latitude 44 degrees 7 minutes 5.5 seconds north and longitude 113 degrees 21 minutes 6.9 seconds west; NAD 83. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine tubular pores; 15 percent gravel, 2 percent cobbles, and 1 percent stones; neutral (pH 7.0); clear smooth boundary.

A2—3 to 10 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; many very fine, fine, and medium roots; common very fine tubular pores; 20 percent gravel and 3 percent cobbles; neutral (pH 6.7); clear wavy boundary.

BA—10 to 19 inches; brown (7.5YR 5/4) gravelly loam, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 24 percent gravel and 3 percent cobbles; neutral (pH 6.7); gradual wavy boundary.

Bt—19 to 41 inches; brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and moderately plastic; common very fine, fine, and medium roots; common very fine tubular pores; 15 percent faint clay films on all faces of peds and 15 percent faint clay films on surfaces along pores; 40 percent gravel and 5 percent stones; neutral (pH 6.7); gradual wavy boundary.

C—41 to 60 inches; light brown (7.5YR 6/4) extremely gravelly loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few

very fine, fine, and medium roots; few very fine tubular pores; 45 percent gravel, 15 percent cobbles, and 5 percent stones; neutral (pH 7.0).

Range in Characteristics

Depth to restrictive feature: More than 60 inches
Thickness of mollic epipedon: 10 to 16 inches

A horizon:
- Organic matter content—2 to 3 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—18 to 27 percent
- Content of rock fragments—10 to 25 percent gravel, 0 to 3 percent cobbles, and 0 to 3 percent stones
- Reaction—pH 6.6 to 7.8

BA horizon:
- Organic matter content—1 to 2 percent
- Texture (fraction less than 2 millimeters in diameter)—loam
- Content of clay—18 to 27 percent
- Content of rock fragments—12 to 34 percent gravel and 0 to 6 percent cobbles
- Reaction—pH 6.6 to 7.8

Bt horizon:
- Organic matter content—0.5 to 1.0 percent
- Texture (fraction less than 2 millimeters in diameter)—sandy clay loam, clay loam
- Content of clay—20 to 30 percent
- Content of rock fragments—19 to 40 percent gravel, 0 to 11 percent cobbles, and 0 to 5 percent stones
- Reaction—pH 6.6 to 7.3

C horizon:
- Organic matter content—0 to 0.5 percent
- Texture (fraction less than 2 millimeters in diameter)—loam, sandy loam, sandy clay loam
- Content of clay—15 to 25 percent
- Content of rock fragments—18 to 54 percent gravel, 6 to 25 percent cobbles, and 0 to 5 percent stones
- Reaction—pH 6.6 to 7.8

Formation of the Soils

Soil is a natural, three-dimensional body on the earth's surface that supports, or is capable of supporting, plants. It is a mixture of minerals, organic matter, water, and air, all of which occur in varying proportions. Soils differ in their appearance, productivity, and management requirements in different areas and within short distances. The characteristics of a soil are determined by the interaction of five factors: (1) the parent material; (2) the climate in which the soil material has accumulated and has existed since accumulation; (3) the relief, which influences the drainage, moisture content, and aeration of the soil, the susceptibility of the soil to erosion, and the exposure of the soil to sun and wind; (4) the living organisms, or plants and animals living on and in the soil, that act on the soil material; and (5) the length of time the climate, plants, and animals have acted on the soil material (Jenny, 1941). This section explores how these five soil-forming factors have influenced soil development in the survey area.

Parent Material

Soils are strongly influenced by the characteristics of the parent material, particularly the mineralogy and texture. The soils in the survey area formed in tephra, loess, silty alluvium, eolian sand, mixed alluvium, lacustrine deposits, and residuum and colluvium derived from metamorphic and volcanic rock. Volcanic ash may have been an important component of the loess deposited in the survey area, perhaps contributing to the development of a duripan and argillic horizon in the soils (McGrath and others, 1987).

The parent material ranges in age from the Mississippian period of the Paleozoic era to the Holocene epoch (Bond and others, 1978). The soils of the mountains and foothills formed in material derived from several kinds of rock, including Paleozoic shale, conglomerate, sandstone, and siltstone and Eocene dacite, rhyolite, and granite. The soils that formed in this material exhibit varying degrees of development. They formed mainly in colluvium and colluvium mixed with volcanic ash. The soils are generally shallow to moderately deep, do not contain lime, have a weakly developed to moderately developed profile, and are very gravelly or very cobbly. Vitale, Blackspar, and Dollarhide soils are examples. Soils on the fan remnants of the foothills formed in mixed alluvium derived from the various kinds of rock. These soils are very deep, have accumulations of clay in the argillic horizon, and have accumulations of carbonates below the argillic horizon. Drage and Justesen soils are examples.

The soils that formed in tephra-influenced colluvium are in the mountainous area adjacent to the Craters of the Moon National Monument and Preserve. Because of the proximity of these soils to recent volcanic activity, substantial amounts of tephra have been incorporated into the upper part of the profile (Stearns, 1967). The soils are characterized by a very gravelly, weakly developed profile. The surface of the soils has low bulk density. Lavacreek soils are an example.

As a result of the volcanic activity in the survey area, lava flows are spread out over about 99 percent of the area. These flows vary in age from recent to the Tertiary. The most recent lava flows are those of the Craters of the Moon Formation (Stearns, 1967). These flows are very young and are primarily of two distinct types, pahoehoe

and a'a'. The names originate from the Hawaiian Islands. The pahoehoe flows have a surface pattern resembling sequences of lava ropes oriented in the direction of the flow, or they can be relatively smooth (fig. 21). This type of flow is also characterized by sinkholes, fissures, and pressure ridges. The a'a' flows are characterized by a mass of broken lava, cinders, and splatter cones (fig. 22).

Folists are on recent lava surfaces. These unsaturated organic soils are in crevices and depressions on the lava surface and support very sporadic vegetation adapted to this harsh environment. The parent material of organic soils is biologic in origin, rather than geologic, with the vegetation growing in crevices supplying the necessary organic debris to provide nutrients and moisture. Soil acidity is directly influenced by the type of vegetation supported by the soils. The more acidic leaf litter results in soils that have low pH while the more alkaline plant debris results in soils that have more neutral pH. A compared to Folists of wetter climates, those forming in the survey area have a substantially higher bulk density with a mean of 0.41 grams per cubic centimeter. The influence of loessial mineral material likely accounts for the higher mineral content and subsequent higher bulk density (Vaughn, 2008). These soils are of very small extent; they were not characterized or identified during this soil survey.

The soils on the flows that are slightly older formed mainly in loess and tephra. They commonly are very shallow or shallow to bedrock and have a weakly developed profile. Cinderhurst soils formed in volcanic ash and cinders, and Starbuck soils formed in eolian deposits. Other soils that formed in tephra are in areas from the central part to the northern part of the survey area where volcanic activity has been the most recent. The soils are on cinder cones and on recent lava flows near the cones. Examples include the Bigcinder, Northcrater, and Infernocone soils. The profile of these soils consists dominantly of cinders and volcanic ash. A number of soils in the survey area have unique characteristics that are not found in soils elsewhere.

Figure 21.—Pahoehoe lava.

Figure 22.—A'a' lava.

These are the Bigcinder, Craters, Echocrater, Goodalfs, Hal, Infernocone, Northcrater, Roundknoll, Silentcone, Sunsetcone, and Treemold series.

The Snake River Basalt Formation consists of somewhat older flows of the Pleistocene that exhibit linear etching from erosion. These flows have a thin mantle of loess and eolian sand, locally reworked by water, and in some areas, loess over residuum derived from basalt (Lewis and Fosberg, 1982; Pierce and others, 1982). The soils that formed in this material have a moderately developed profile. They are younger than the soils on foothills and mountains and have developed in a lower precipitation zone. They have a weakly developed argillic horizon or a cambic horizon and commonly have accumulations of carbonates in the B horizon. McCarey, Pedleford, and Bancroft soils are examples. The soils formed in loess over residuum, are much older, and have a strongly developed argillic horizon that has subsequently been covered by a thin layer of loess and silty alluvium. Examples of these older soils are the Goodington and McBiggam series.

Over 500 kipukas have been located in the survey area. A kipuka is a low "island" of land surrounded by a younger (more recent) lava flow (fig. 23). The kipukas are highly variable in size, ranging from about one acre to more than 100 acres. These areas are unique in that they are difficult to reach by both man and animals, making them a valuable resource for native plant study. Generally, the soils are the same or similar to those of somewhat older flows of the Pleistocene. Carey Kipuka is in the northwestern part of the survey area, about 15 miles east of the town of Carey. It is a highly studied area, and numerous papers have been written about it.

The soils in slightly concave to concave positions on basalt flows formed in wind-deposited material that was transported from higher positions and redeposited in small, closed basins. Thus, the soil-stratigraphy pattern resembles that of lacustrine deposits rather than that of eolian deposits (Lund and others, 1981). Examples include the loamy Paulville soil, the silty Power soil, and Playas. Playas formed in the lowest positions where the fine-textured material collected. These low areas also have accumulated salts over time and have standing water in spring and

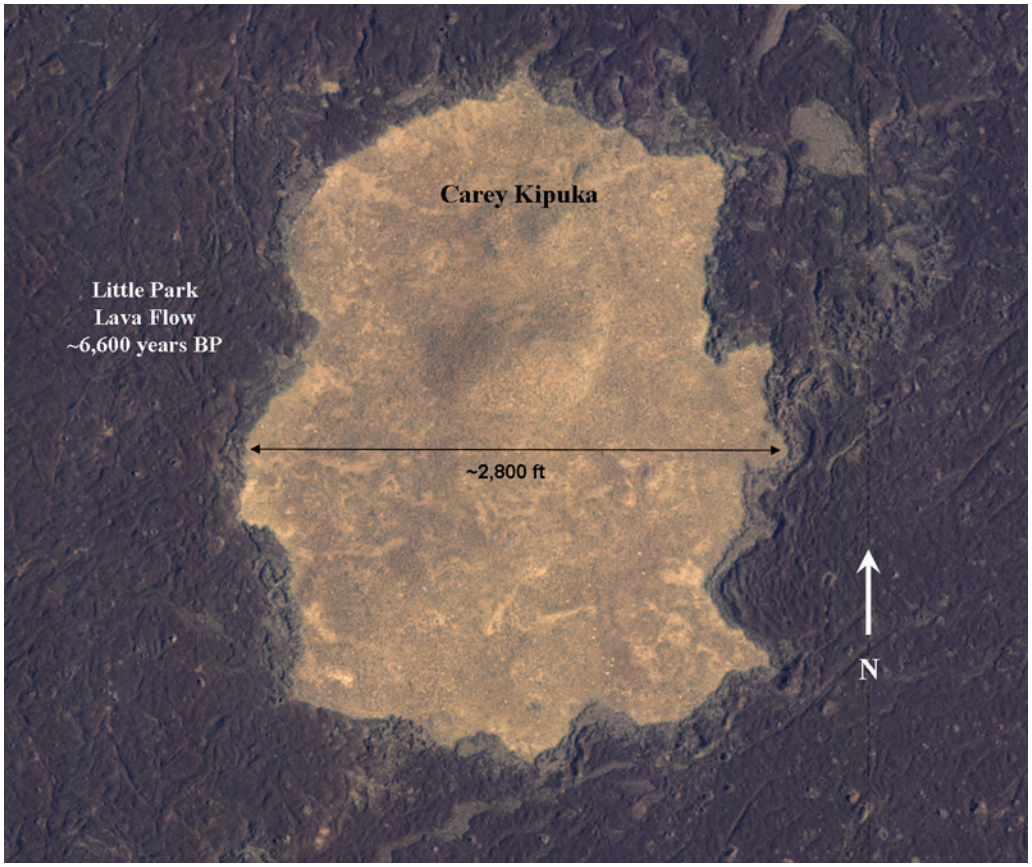


Figure 23.—Carey Kipuka.

early in summer. They generally are devoid of vegetation and are somewhat circular in shape.

Wind-modified alluvial deposits are also in the survey area. Throughout the Pleistocene, basalt flows have periodically dammed and redirected the Big Wood, Little Wood, and Snake Rivers, depositing material on basalt flows (Kimmel, 1982). Much of this material was later redistributed by the prevailing southwesterly winds (Maide, 1971 and 1982). Sandy soils are common downwind of past stream channels. Coarse-loamy soils, such as those of the Vining and Kecko series, formed in sandy loam eolian material. Sandy soils, such as those of the Quincy and Walco series, formed in fine sand eolian material.

A duripan has developed in some soils that are on the older flows within the Snake River Basalt Formation and are in the 8- to 13-inch precipitation zone. For a duripan to form, soluble silica must be present in the parent material and sufficient water must move through the soil profile to translocate the silica (Hipple, 1983). A duripan forms at a hydraulic discontinuity in the soil profile. This is a layer in which the porosity abruptly changes and the downward movement of water and its dissolved constituents is stopped or slowed resulting in an accumulation of material. Over time silica plugs the pores and voids, and the layer becomes thicker and more cemented. Many duripans formed at the soil/basalt interface in soils, such as those in the McPan, Rekima, and Taunton soils (Logan, 1983).

In some areas, distinct drainageways have developed on basalt plains and local alluvium has accumulated. The soils in these areas receive more moisture, mainly from runoff and snowmelt, than the soils on adjacent side slopes (Passey and others, 1982). This additional moisture leaches carbonates, bases, and silica from the soils;

thus, they have a moderately developed argillic horizon and a lower base saturation. Molyneux and Rehfield soils are examples.

Climate

Climate has a strong influence on soil formation. Temperature and precipitation affect the weathering of rock and its constituent minerals, the illuviation and eluviation of material, the kinds and amount of vegetation, and the accumulation and decomposition of organic matter. The climate in the survey area is characterized by warm, dry summers and cold, moist winters.

Generally, as elevation increases, the mean annual precipitation increases and the mean annual temperature decreases. The soil moisture regime gradually changes from aridic in the south to xeric in the north, and the soil temperature regime transitions from mesic in the south to frigid in the north with cryic soil temperatures on higher elevation, north-facing slopes.

The warmest and driest area is in the southern part of the survey area, where elevation is lowest. This area receives about 8 to 12 inches of precipitation annually and has a mean annual air temperature of about 45 to 52 degrees F. The mountains in the most northern part of the survey area receive the highest amount of precipitation and have the coldest temperatures. This area receives 14 to 20 inches of precipitation or more annually and has a mean annual air temperature of about 37 to 45 degrees. At the higher elevations, most of the precipitation falls as snow (fig. 24).

The soils in the warmest and driest areas typically have a light-colored surface layer, and calcium carbonate is leached to a shallow depth. The Nargon, Atom, and Portino series are examples.

Because of the low precipitation, movement of water through the soil is not sufficient to leach the carbonates from the profile. Some of these soils have an accumulation of silica, forming a duripan in the B horizon. The McPan and Taunton series are examples of soils that have a duripan. The Paulville and Power series are examples of soils that do not have a duripan but have a moderately developed argillic B horizon. The vegetation on these drier soils is mainly Wyoming big sagebrush and bluebunch wheatgrass.

Calcium carbonates in the soils in the 12- to 16-inch precipitation zone have been leached to a greater depth in the profile, and in some areas, they have been leached out completely. These soils are cooler, mainly because they are at higher elevations, and they receive more precipitation. The additional moisture contributes to the weathering of minerals to form clay and then the translocation of the clay to a lower depth. The vegetation on these soils also reflects the additional moisture and cooler temperatures. These soils support mountain big sagebrush, threetip sagebrush, basin big sagebrush, bluebunch wheatgrass, and Idaho fescue. Because of the abundance of grasses in the plant community, considerably more organic matter is produced and incorporated into the A horizon annually. Microbial activity is also slowed because of the cooler temperatures, and thus the breakdown of organic matter is slowed. The combination of more organic matter being produced and less being broken down has resulted in a thicker A horizon in these soils than in the soils that receive less precipitation. McCarey and Molyneux soils are examples. The leaching of clay, silica, and bases has resulted in some of the soils in this higher precipitation zone having a lower base saturation. Molyneux and Rehfield soils are examples.

Soils in the coldest and wettest parts of the survey area typically receive more than 16 inches of precipitation and support mainly mountain big sagebrush, mountain snowberry, and Idaho fescue plant communities. These soils are similar to those in the 12- to 16-inch precipitation zone. They do not have accumulations of carbonates and commonly have a thicker A horizon. Lavacreek and Povey soils are examples. Some of the soils in the higher precipitation zone on northerly aspects support an

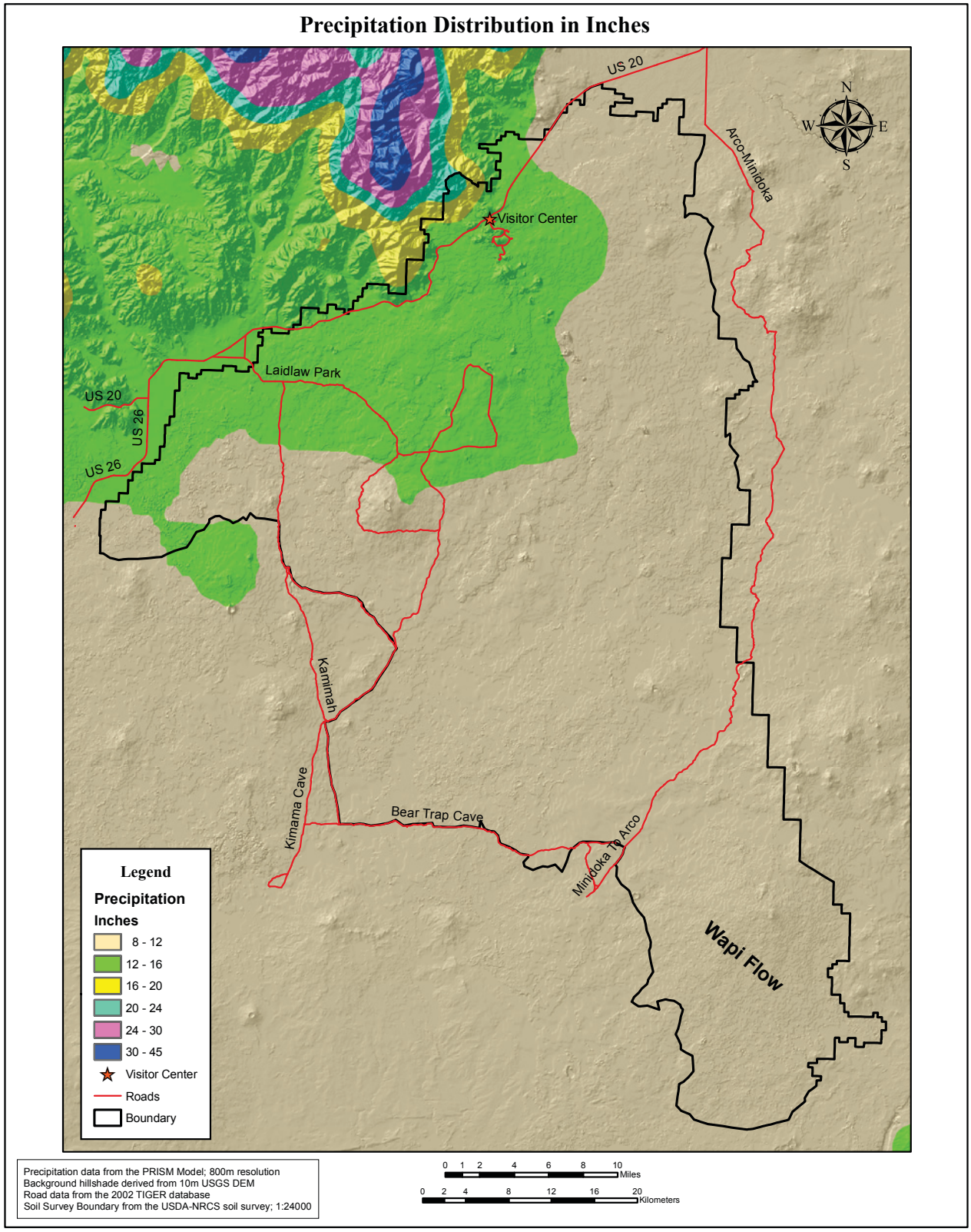


Figure 24.—Distribution of precipitation in the survey area and surrounding areas.

overstory of Douglas-fir and an understory of mountain big sagebrush, snowberry, and bitterbrush. Because these areas support little grass, less organic matter is incorporated into the soil annually. In addition, the cold temperatures slow microbial activity. These soils, therefore, have a thin, dark-colored A horizon. Sunsetcone soils are an example.

Topography and Relief

Topography, or the shape of the landscape, and relief, or the differences in elevation, influence soil formation by affecting the rate of erosion, effective precipitation, soil drainage, and exposure to the sun and wind. Most of the survey area is on the Central Snake River Plain, a mosaic of basalt plains, steep-sided cinder cones in the northeastern part along the Great Rift, and low-shield volcanoes, locally called “buttes” (Stearns, 1967; Maley, 1987). The highest buttes rise 200 to 400 feet above the low-relief Snake River Plain, and the cinder cones can be as much as 700 feet higher. The regional style of basaltic volcanism produced a hummocky surface with pressure ridges, flow ridges, and collapse depressions (Greeley, 1982). The amplitude of the undulations in the flow surface has an important effect on soil

Approximate Age and Characteristic Soil Development

Age (years)	Subsoil development	Representative soils
About 2,000	No development	Northcrater
2,000-12,000	Cambic horizon	Starbuck-Trevino-Kecko
12,000-200,000	Weak argillic horizon, thin duripan	McPan-Chijer-Taunton
200,000-2,000,000	Strong argillic horizon	Goodington-McBiggam

development. Flows with less than 10 feet of relief tend to be covered by eolian material with moderately deep soils in the less sloping areas and shallow soils in the steeper areas. Rock outcrop appears as small islands of exposed basalt in the highest areas. In contrast, flows with more than 25 feet of relief tend to have steeper slopes, deep and very deep soils in the concave areas, and Rock outcrop in the intervening convex areas. The areas of Rock outcrop on these flows tend to have steeper slopes and are larger. Also, exterior drainage on these flows develops slowly, further adding to the material in the concave areas. Flows with 10 to 25 feet of relief tend to be covered with soils that vary in depth from very deep to shallow.

In contrast, the soils on the stable, old, level to gently sloping land surfaces exhibit a high degree of development. The soils on the older basalt plains that have slopes of less than about 8 percent have a subsoil that is extremely rich in clay. Examples include soils of the Goodington and McBiggam series.

The soils on ridges, in convex positions, and on southerly aspects have less effective moisture than do the soils in other positions because the wind tends to blow away the snow, there is more solar radiation, and the moisture tends to run downhill

to lower landscape positions. Conversely, the soils in basins and concave positions commonly receive significantly more moisture than do those in other positions (Passey and others, 1982). The higher amount of moisture in the soils in basins tends to leach carbonates, bases, and silica to a greater depth than in the soils on ridges and side slopes. An example is the Deerhorn-Rehfield-Rock outcrop complex, 2 to 15 percent slopes, detailed soil map unit. The Deerhorn soil, which is on side slopes, has a calcic horizon and a duripan. The Rehfield soil, which is in basins and drainageways, has had the carbonates and silica leached out of the profile and has developed a weak argillic horizon. Landscape position also affects soil depth. Loess tends to erode from convex positions and accumulate in concave positions. The soils in convex positions generally are shallow or moderately deep. The Starbuck and Rekima series are examples of soils in convex positions. The Paulville series is an example of soils in concave positions.

About 1 percent of the survey area is on steep mountain side slopes and fan remnants. Soils in these positions commonly vary in depth of the profile and thickness of the A horizon. Soils on north and east aspects receive less solar radiation than do those on south and west aspects. On north and east aspects, the soil temperatures are lower and the snowpack in winter is greater. Because the soils receive moisture from the snowpack later in the growing season, they support more plant cover that helps to control erosion. Consequently, the soils are deeper. The lower soil temperatures inhibit the breakdown of the organic matter produced by the abundant vegetation; thus, a thicker A horizon develops. Povey and Lavacreek series are examples of soils that exhibit these characteristics. Soils on south and west aspects generally are shallower and have a thinner A horizon than those on north and east aspects. Direct sunlight heats and dries the soil more quickly during the growing season. This heating speeds up the breakdown of organic matter and limits plant growth, resulting in a thinner A horizon. The rate of erosion is higher because of the limited ground cover; thus, these soils are shallower. Examples are Vitale, Blackspar, and Dollarhide soils.

Soils on fan remnants are very deep and well drained. Most of these soils are on southerly aspects. Slopes are gentle enough to provide stability to the soil and allow for moderate development. These soils are characterized by an argillic and calcic horizon. Drage and Justesen soils are examples.

Living Organisms

Living organisms include plants, soil microbes, insects, worms, and other organisms that affect soil development by adding organic matter, mixing and aerating the soil, and cycling nutrients and energy. The kinds and amount of living organisms are largely determined by climatic factors.

Soils that developed at the lowest elevations in the southern part of the survey area, where the mean annual precipitation is about 8 to 12 inches, support limited vegetation and soil biologic activity. The soils are dry for much of the growing season, and the annual precipitation is not sufficient to leach carbonates deep into the soil. Wyoming big sagebrush and bluebunch wheatgrass are the main plants. Because the production of vegetation is limited, the annual addition of organic matter is also limited. Consequently, these soils have a thin A horizon and carbonates are close to or at the surface. Chijer, Deuce, and Portino soils are examples. The soils at middle elevations in the survey area receive 12 to 16 inches of precipitation and have cooler temperatures. These soils support mainly mountain big sagebrush, threetip sagebrush, bluebunch wheatgrass, and Idaho fescue. This abundance of grasses adds appreciable amounts of organic matter to the soil surface, resulting in a thicker A horizon. Micro-organisms are also very active in this environment, and they influence the color, structure, and physical appearance of the soil. Molyneux, Drage, Vitale, and Bancroft soils are examples. At the highest elevations and generally on north- and east-facing slopes, where the mean annual precipitation is 16 inches or more,

the soils support mainly mountain big sagebrush, snowberry, and Idaho fescue and some Douglas-fir. The abundant shrubs and grasses produce a substantial amount of organic matter that annually is added to the soil and results in a thicker A horizon. Because of the cold temperatures, micro-organisms are not as active and they have less influence on the breakdown of organic matter, soil structure, and physical appearance of the soils. Povey soils are an example. Douglas-fir and snowberry produce less organic matter; thus, the soils that support mainly these plants have a thinner A horizon. Sunsetcone soils are an example.

Time

The length of time that landforms in the survey area have been exposed and the variability of parent material, relief, and vegetation all contribute to the wide variety of soils in the survey area. The different horizons in the soil profile and the degree of development, however, can be directly related to time.

The soils in the survey area range from hundreds of years old to more than a million years old. Time and climate have a complex relationship; local climatic conditions during the Pleistocene ranged from much cooler than the present climate to warm and moist (Pierce and Scott, 1982). Similarly, sources of silty and sandy material have changed dramatically over time as a result of continued damming and redirection of rivers on the Snake River Plain. Also, volcanic ashfall may have been a major factor in the development of argillic horizons. Most of the soils in the survey area formed in several different kinds of parent material deposited at different times. Dramatic examples include soils of the Goodington and McBiggam series, which formed in young loess deposited over truncated clay-rich paleosols of the middle Pleistocene to Pliocene.

Chronosequences of sandy and silty parent material on basalt flows of various ages illustrate the effects of time on soil development. With the passage of time, cambic horizons develop first followed by argillic horizons and duripans. Over time, duripans become thicker and clay accumulations increase. Soils that formed in eolian material that has been reworked by water are on the oldest lava flows in the area. These soils exhibit a high degree of development. In some areas carbonates and silica have been leached from the upper part of the profile and have accumulated in the lower part, forming a duripan, commonly at the point of contact with bedrock (Logan, 1983). Clay also has moved down through the profile and has accumulated above the duripan or bedrock, forming an argillic horizon. Examples of soils that have both a duripan and an argillic horizon are those of the McPan and Manard series. Examples of those that have only an argillic horizon are the Molyneux and Rehfield series.

Soils on the younger lava flows are characterized by a calcic horizon because of the downward movement of carbonates in the profile and by a moderately developed argillic horizon because of the limited movement of clay. McCarey, Pedleford, and Bancroft soils are examples. Cinderhurst soils are an example of the youngest and least developed soils on lava flows. Little movement of clay has taken place in these soils; thus, they have only a weakly developed, thin B horizon.

The topography and hydrology of the basalt plains also has changed over time. Old basalt flows have drainageways and external drainage; young basalt flows have closed topographic contours and internal drainage. On basalt plains of the recent to middle Pleistocene, water-transported silt and salts collect in closed basins, ephemeral lakes, or playas and dot the landscape in spring. Seasonal lakes must have been much larger and must have received much more sediment during glacial periods, when spring runoff in southern Idaho was estimated to have been ten times higher than it is at present (Passey and others, 1982; Pierce and Scott, 1982). Farmell, Power, and Paulville soils formed in these areas.

Soils on the foothills and mountains in the northern part of the survey area are quite variable. Lavacreek, Vitale, Dollarhide, and Povey soils formed in Paleozoic

sedimentary and metamorphic rock and sediment on steep slopes. Because the parent material is resistant to weathering and the soil material is constantly moving downslope, these soils exhibit little development even though they are quite old. Drage soils are on relatively young fan remnants of the foothills and mountains and have a weakly developed argillic horizon and a calcic horizon.

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

Abrupt textural change. A soil horizon boundary or thin transitional zone characterized by a considerable increase in clay that occurs at the contact between a surface layer, subsurface layer, subsoil, or substratum.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Andesite. A fine-grained volcanic rock consisting mainly of plagioclase feldspar with small amounts of pyroxene, hornblende, or biotite. It is dark colored, mainly shades of gray or green.

Andic soil properties. A collection of physical and chemical properties that define the criteria for the Andisol order (Soil Survey Staff, 1999).

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay (Soil Survey Staff, 1999).

Aridic. A soil moisture regime common to a climate that lacks soil moisture available for plant growth during the growing season. The soils are dry for more than 50 percent of the growing season (Soil Survey Staff, 1999).

Ash (volcanic). Unconsolidated, pyroclastic material less than 2 millimeters in all dimensions; commonly called volcanic ash.

Ashy (family particle-size class). A substitute class term used for the family particle-size in mineral soils (Soil Survey Staff, 1999).

Ashy (textural modifier; for example, ashy sandy loam). A term used to describe material in which the fine-earth fraction has 30 percent or more particles that are 0.02 to 2.0 millimeters in diameter. Of this, 5 percent or more is volcanic glass and the ammonium oxalate extractable aluminum plus ½ the ammonium oxalate extractable iron times 60 added to the percentage of volcanic glass are equal to or more than 30.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Aspect, north. All compass directions with a northerly aspect, including west-northwest, northwest, north-northwest, north, north-northeast, northeast, and east-northeast. North aspects have less solar radiation than south aspects and consequently are cooler and more moist.

Aspect, south. All compass directions with a southerly aspect, including east-southeast, southeast, south-southeast, south, south-southwest, southwest, and west-southwest. South aspects have more solar radiation than north aspects and consequently are warmer and more droughty.

Asthenosphere. The zone in the earth's mantle that exhibits plastic properties. It is below the lithosphere at a depth of 100 to 200 kilometers.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basalt. A fine-grained, dark-colored extrusive igneous rock composed primarily of calcic plagioclase and pyroxene, with or without olivine.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Bulk density. The mass of soil per unit bulk volume. Moist bulk density refers to the oven-dry weight of a given volume of soil with moisture content at or near field moisture capacity.

Butte. An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcic horizon. A subsurface horizon that has an accumulation of calcium carbonate or of calcium and magnesium carbonate (Soil Survey Staff, 1999).

Calcium carbonate equivalent. The quantity of carbonates (CO3) in the soil, expressed as CaCO3 and as a percentage by weight of the fraction less than 2 millimeters in size.

Caliche. A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

Cambic horizon. A mineral soil horizon that is loamy very fine sand or finer textured and has soil structure rather than rock structure. The cambic horizon contains some weatherable minerals, and it is characterized by alterations or removals as indicated by redoximorphic features or by stronger chroma or redder hue than that of the underlying horizons (Soil Survey Staff, 1999).

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Carbonates. Chemical compounds containing the carbonate ion C03 in combination with bases such as calcium, magnesium, potassium, and sodium.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Cinder. A glassy vesicular pyroclastic volcanic fragment that is 2 millimeters or more in all dimensions and is strongly cemented or has a stronger degree of cementation.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Coarse-loamy. A loamy particle-size class that is 15 percent or more fine sand or coarser, including fragments as much as 3 inches in diameter, and is less than 18 percent clay in the fine-earth fraction.

Coarse-silty. A loamy particle-size class that is less than 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is less than 18 percent clay in the fine-earth fraction.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (for example, direct gravitational action) and by local, unconcentrated runoff.

Compaction. The increase in soil bulk density as a result of applied loads or pressure. Compaction reduces porosity, water infiltration, and root penetration.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Coniferous. Pertaining to plants of the *Coniferales* order of the *Gymnospermae* subdivision. Coniferous plants have cone fruit and are commonly, but not always, evergreen. Examples include limber pine and Douglas-fir.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cordilleran ice sheet. The glacial ice sheet that covered much of the northern half of North America, from the eastern face of the Rocky Mountains to the Pacific Ocean, during the Pleistocene.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cryic. A soil temperature regime in which the mean annual soil temperature at a depth of 20 inches ranges from 33 to 46 degrees F. The mean summer soil temperature is less than 47 degrees for soils that have an O horizon, and it is less than 59 degrees for soils that do not have an O horizon.

Cryoturbate. A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Densic contact. A boundary between soil and coherent underlying material that restricts the penetration of roots, is not cemented, and is typically referred to as dense glacial till and as a Cd horizon.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

Diagnostic horizons. Combinations of specific soil characteristics that are indicative of certain classes of soils. Those that occur at the soil surface are called epipedons, and those that occur below the soil surface are called diagnostic subsurface horizons.

Diamict. A nonsorted or poorly sorted, unconsolidated deposit that contains a wide range of particle sizes, commonly from clay to cobble- or boulder-sized, rounded and/or angular fragments with a clayey, silty, or sandy matrix, depending on the local source bedrock.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dike. An intrusion of rock that cuts across the bedding or foliation of the pre-existing rock.

Diorite. A coarse-grained igneous rock consisting mainly of plagioclase but with smaller amounts of hornblende, biotite, and pyroxene. Quartz is absent or sparse. See Quartz diorite.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Dolomite. A sedimentary rock consisting mainly of the mineral dolomite, which is a carbonate of magnesium.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Durinodes. Nodules that are weakly cemented to indurated with silica oxide (SiO2).

Duripan. A subsurface soil horizon that is cemented by illuvial silica, commonly opal or microcrystalline forms of silica, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or hydrochloric acid.

Earthy fill. See Mine spoil.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Effervescence. The gaseous response exhibited as bubbles on the soil ped when drops of dilute (1:10) hydrochloric acid (HCl) are applied. This response typically indicates the presence of calcium carbonates (CaCO3).

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erratic. Refers to a rock fragment transported by glacial ice or floating ice that is different from the bedrock in the area in which it is deposited.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fault. A fracture or fracture zone of the earth with displacement along one side in respect to the other.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Fine-loamy. A loamy particle-size class that is 15 percent or more fine sand or coarser, including fragments as much as 3 inches in diameter, and is 18 to 34 percent clay in the fine-earth fraction.

Fine-silty. A loamy particle-size class that is less than 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is 18 to 34 percent clay in the fine-earth fraction.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Foliated. Refers to metamorphic rock that exhibits parallel structure or layering.

Foothills. A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Forestland. Land on which the historic vegetation was dominated by a 25 percent overstory canopy cover of trees, as determined by crown perimeter-vertical

projection. A tree is defined as a woody-stemmed plant that can grow to 4 meters (about 13 feet) in height at maturity.

Fragmental. A particle-size class used to classify mineral soils that have less than 10 percent by volume fine-earth soil material.

Frigid. A soil temperature regime in which the mean annual soil temperature at a depth of 20 inches ranges from 33 to 46 degrees F. The mean summer soil temperature is more than 47 degrees for soils that have an O horizon. The difference between the mean winter soil temperature and the mean summer soil temperature is more than 9 degrees F.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphic surface. A mappable area of the earth's surface that has a common history; the area is of similar age and is formed by a set of processes during an episode of landscape evolution.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Granite. A coarse-grained igneous rock consisting mainly of quartz and feldspar, with more orthoclase than plagioclase. See Granodiorite.

Granitic. Term generally applied to granite or granitelike rock. It is used when referring to granite, granodiorite, quartz monzonite, quartz diorite, diorite, and granitic gneiss.

Granitic gneiss. A crystalline, banded metamorphic rock of granitic composition.

Granodiorite. A coarse-grained igneous rock consisting mainly of quartz and feldspar, with more plagioclase than orthoclase. See Granite.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Grazing system, planned. A system for managing rangeland in which three or more fields are alternately grazed and then rested in a planned sequence for a period of years.

Ground water. Water filling all the unblocked pores of the material below the water table.

Grus. The fundamental products of *in situ* granular disintegration of granite and granitic rock, dominated by intercrystal disintegration.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Habitat type. The collective area occupied by a single plant association. It is defined and described on the basis of the vegetation and its associated environment.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Histic epipedon. A thin, organic soil horizon that is saturated with water at some time during the year unless it is artificially drained. This horizon is at or near the surface of a mineral soil. It contains more than 12 percent organic carbon (Soil Survey Staff, 1999).

Historic climax plant community. The plant community that was best adapted to the unique combination of factors associated with the ecological site. It was in a natural dynamic equilibrium with the historic biotic, abiotic, and climatic factors on its ecological site in North America at the time of European immigration and settlement.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Consolidated bedrock beneath the soil that has an extremely weakly cemented to moderately cemented rupture-resistance class.

R horizon.—Consolidated bedrock beneath the soil that has a strongly cemented or stronger rupture-resistance class.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts

the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Indurated. Refers to having a hard, brittle consistency as a result of particles being held together by cementing substances such as silica, calcium carbonate, and iron. An indurated layer can be broken by a sharp blow of a hammer.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intrusive rock. Igneous rock derived from molten matter (magmas) that invaded pre-existing rock and cooled below the surface of the earth.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Kipuka. An area of land completely surrounded by one or more younger lava flows. A kipuka forms when lava flows on either side of a hill, ridge, or older lava dome as it moves downslope or spreads from its source. Older and more weathered than

their surroundings, kipukas commonly appear to be like islands within a sea of lava flows. They commonly are covered with soil and late ecological successional vegetation that provide visual contrast as well as habitat for animals in an otherwise inhospitable environment.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Krotovina. An animal burrow that has been filled with organic or mineral material from another soil horizon.

Ksat. See Saturated hydraulic conductivity.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin, discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated) within a coarser (e.g., sandy), eluviated layer.

Landform. Any physical, recognizable form or feature on the earth's surface that has a characteristic shape and range in composition and is produced by natural causes; it can span a wide range in size. Landforms provide an empirical description of similar portions of the earth's surface.

Landscape (soils). An assemblage, group, or family of spatially related, natural landforms over a relatively large area; the land surface which the eye can comprehend in a single view.

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lava field. An area covered primarily by lava flows. The terrain can be rough and broken or relatively smooth. It can include vent structures (e.g., small cinders cones, spatter cones, etc.), surface flow structures (e.g., pressure ridges, tumuli, etc.), and small, intermittent areas covered with pyroclastics.

Lava plain. A broad area of nearly level land, which can be localized but commonly is hundreds of square kilometers in extent, covered by a relatively thin succession of primarily basaltic lava flows resulting from fissure eruptions.

Leaching. The removal of soluble material from soil or other material by percolating water.

Leeward. Being in or facing the direction toward which the wind is blowing.

Limestone. Sedimentary rock consisting mainly of calcium carbonate (CaCO3).

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Lithic contact. A boundary between soil and coherent underlying material, typically bedrock. The bedrock has a cementation class of strongly cemented or stronger and is typically referred to as an R horizon.

Lithologic discontinuity. A significant change in particle-size distribution or mineralogy that indicates a difference in the material from which the soil horizons have formed.

Lithosphere. The solid inorganic portion of the earth, composed of rocks, minerals, and elements; the outer surface and interior of the solid earth.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy-skeletal. A particle-size class in which rock fragments 2 millimeters in diameter or larger make up 35 percent or more by volume. The fine-earth fraction is loamy.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Major Land Resource Area (MLRA). A broad geographic land area characterized by a particular pattern of soils, geology, climate, water resources, and land use. An area is typically continuous, but small separate areas can occur.

Mantle. The layer of the earth's interior that is composed mostly of solid rock and extends from the base of the crust to a depth of about 2,900 kilometers.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Mature forest stage. A forest successional stage in which the most shade-tolerant adapted tree species are well represented (more than 50 percent composition) and are dominant in the middle to upper canopy layers. Trees generally are more than 9 inches in diameter at breast height, and the canopy cover is more than 25 percent.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medial (family particle-size class). A substitute class term used for the family particle-size class in mineral soils (Soil Survey Staff, 1999).

Medial (textural modifier, such as medial loam). A USDA textural modifier used in conjunction with a USDA mineral soil texture to indicate unique physical and chemical properties. The properties are defined in Soil Taxonomy and are typically low bulk density, high content of iron and aluminum, and high retention of phosphate (Soil Survey Staff, 1999).

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Mesic. A soil temperature regime in which the mean annual temperature at a depth of 20 inches ranges from 47 to 58 degrees F. The difference between the mean winter soil temperature and the mean summer soil temperature is more than 9 degrees F.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Microclimate. The climate of a small distinct area, as of a forest or city, or a confined space, as of a building or greenhouse.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Miscellaneous area. A kind of map unit component that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Moisture control section. The layer within a soil profile used to determine the soil moisture regime. The upper boundary is the depth to which a dry soil is moistened by 1 inch of water in 24 hours. The lower boundary is the depth to which a dry soil is moistened by 3 inches of water in 48 hours.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil (Soil Survey Staff, 1999).

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Mountain valleys. Any small, externally drained depression floored with either till or alluvium, that occurs on a mountain or within mountains. See intermontane basins.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. A USDA texture associated with organic soils that meet the degree of organic matter decomposition associated with hemic soil material.

Mudstone. A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil (Soil Survey Staff, 1999).

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Ochric epipedon. A surface horizon of mineral soil that is too light in color, too high in chroma, too low in organic carbon, or too thin to be a mollic, umbric, or histic epipedon (Soil Survey Staff, 1999).

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Orogenic. Of or pertaining to the process of mountain formation.

Overstory. The trees in a forest stand that form the upper crown cover. See Understory.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Paralithic contact. A boundary between soil and coherent underlying material that can be dug with difficulty with a spade. It is referred to as weathered bedrock, has a cementation class of moderately cemented or weaker, and is typically referred to as a Cr horizon.

Pararock fragments. Fragments of rock that are 2 millimeters in diameter or more (e.g., paragravel, paracobble, or parastone). Pararock fragments have a moderately cemented to extremely weakly cemented rupture-resistance class.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedologic. Of or pertaining to the processes of soil formation.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual” and in this glossary. Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

See “Saturated hydraulic conductivity” for conversions of inches per hour to micrometers per second.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plant association. A kind of climax plant community consisting of stands with essentially the same dominant species in corresponding layers.

Plant community. An assemblage of plants living together, reflecting no particular ecological status; a vegetative complex unique in its combination of plants.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Pleistocene. The epoch of geologic time from approximately 10,000 to 2 million years ago. The earlier of the two epochs comprising the Quaternary period. Also called the Glacial epoch.

Pole stage. A forest successional stage in which the vegetation of a stand is dominantly a moderately dense to very dense overstory of trees that have minimal vertical crown depth. The trees generally range from about 5 to 9 inches in diameter at breast height, and the canopy cover normally exceeds 35 percent.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Pumice. A light-colored, vesicular, glassy pararock fragment. The fragments are more than 2 millimeters in diameter and commonly have the composition of rhyolite. Pumice commonly has a specific gravity of less than 1.0 and is thereby sufficiently buoyant to float on water.

Pyroclastic. Pertaining to fragmental material produced by commonly explosive, aerial ejection of clastic particles from a volcanic vent.

Quartz diorite. A coarse-grained igneous rock consisting mainly of plagioclase with smaller amounts of quartz, hornblende, and biotite. (See Granodiorite.)

Quartz latite. A fine-grained volcanic rock consisting mainly of quartz, plagioclase, and orthoclase with minor amounts of biotite and hornblende. Phenocrysts are common. This rock is the extrusive equivalent of quartz monzonite.

Quartz monzonite. A coarse-grained igneous rock consisting mainly of plagioclase, orthoclase, and quartz with minor amounts of biotite and hornblende. (See Granite and Granodiorite.)

Quartzite. A nonfoliated metamorphic rock consisting mainly of quartz sand cemented with quartz.

Quaternary. The period of the Cenozoic era of geologic time, extending from the end of the Tertiary (about 2 million years ago) to the present and comprising two epochs, the Pleistocene (Ice Age) and the Holocene (Recent).

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:

   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of

internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*

B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*

C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.

2. Redoximorphic depletions.—These are zones of low chroma (chroma less than that of the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:

A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*

B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Restrictive feature. A nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly reduce the movement of water and/or air through the soil or that otherwise provide an unfavorable root environment.

Rhyodacite. A fine-grained volcanic rock consisting mainly of quartz and feldspar, with more plagioclase than orthoclase. Phenocrysts are common. Ryodacite is the extrusive equivalent of granodiorite.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riparian. Refers to areas adjacent to water or wetlands; vegetation is dependent on water or use and management directly impacts the water or wetlands.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments that are 2 millimeters in diameter or more (i.e., gravel, cobbles, stones, and boulders). Rock fragments have a strongly cemented or stronger rupture-resistance class.

Rock outcrop. Exposures of bare bedrock.

Rubble land. Areas that consist of cobbles, stones, and boulders, commonly at the base of mountains.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium. The salinity classes, expressed as electrical conductivity, are:

Not saline	0 to 0
Nonsaline	0 to 2
Very slightly saline	2 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	more than 16

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy. A particle-size class in which the texture of the fine-earth fraction is sand or loamy sand but not loamy very fine sand or very fine sand; it is less than 35 percent rock fragments by volume.

Sandy-skeletal. A particle-size class that is 35 percent or more by volume rock fragments 2 millimeters in diameter or larger. The fine-earth fraction is sandy.

Sapling/pole stage. A forest successional stage in which the vegetation of a stand is dominantly saplings and pole-sized trees (generally 2 to 9 inches in diameter at breast height). The canopy cover and understory production are intermediate between the herbaceous or shrub stage and the pole stage.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are *very high*, 100 or more micrometers per second (14.17 or more inches per hour); *high*, 10 to 100 micrometers per second (1.417 to 14.17 inches per hour); *moderately high*, 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour); *moderately low*, 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour); *low*, 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour); and *very low*, less than 0.01 micrometer per second (less than 0.001417 inch per hour). To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Schist. A medium- to coarse-grained foliated metamorphic rock in which the platy minerals are clearly visible. Micaceous minerals commonly are present.

Secondary carbonates and silica. Calcium carbonate and silica weathered from the soil matrix in upper soil horizons and then transported and deposited in the lower horizons by water moving through the soil profile.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slate. A fine-grained metamorphic rock that exhibits strong cleavage or layering.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 2 percent
Gently sloping	2 to 4 percent
Moderately sloping	4 to 8 percent
Strongly sloping	8 to 20 percent
Moderately steep	20 to 30 percent
Steep	30 to 60 percent
Very steep	60 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes)

and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement (in tables). Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Slump. A mass movement process characterized by a landslide involving shearing and rotary movement of a generally independent mass of rock or earth along a curved slip surface. The mass (slump) has its axis parallel to the slope from which it descends. A slump surface commonly exhibits a reversed slope facing uphill.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spodic horizon. An illuvial horizon that is 85 percent or more spodic material. This layer is dominated by active amorphous material that is illuvial and is composed of organic matter and aluminum, with or without iron (Soil Survey Staff, 1999).

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps

material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stoniness (or boulderiness). The relative proportion of larger rock fragments on the surface layer. Used as map unit phase designation for soils containing sufficient amounts of stones and boulders to impose important restrictions on use and management. These phases should not be confused with the use of fragments as textural modifiers. The four phases recognized in this survey are:

Stony (or bouldery).—The areas have enough stones and boulders at or near the surface to be a continuing nuisance during operations that mix the surface layer, but they do not make most such operations impractical. Conventional, wheeled vehicles can move with reasonable freedom over the area. Rocks may damage both the equipment that mixes the soil and the vehicles that move on the surface. Large rock fragments cover about 0.01 to 0.1 percent of the surface.

Very stony (or very bouldery).—The areas have so many stones and boulders at or near the surface that operations that mix the surface layer either require heavy equipment or use of implements that can operate between the larger ones. Tillage with conventionally powered farm equipment is impractical. Wheeled tractors and vehicles with high clearance can operate on carefully chosen routes over and around stones and boulders. Large rock fragments cover about 0.1 to 3 percent of the surface.

Extremely stony (or extremely bouldery).—The areas have so many stones and boulders at or near the surface that wheeled powered equipment, other than some special types, can operate only along selected routes. Tracked vehicles can be used in most places, although some routes have to be cleared. Large rock fragments cover about 3 to 15 percent of the surface.

Rubbly and very rubbly.—The areas have so many stones and boulders at or near the surface that tracked vehicles cannot be used in most places. Large rock fragments cover about 15 to 90 percent of the surface.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subaqueous. Refers to conditions and processes, features, or deposits that exist in or under water, especially fresh water, as in a lake or stream.

Subduction. The process of one lithospheric plate descending beneath another.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Tectonic. Pertaining to the forces involved in, or the resulting structures of, deformation of the earth's crust.

Tephra. Fragmental material produced by a volcanic eruption regardless of composition, fragment size, or emplacement mechanism.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace. (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Terrane. A group of related rocks and the area in which they are exposed at the earth's surface.

Tertiary. The period of geologic time from approximately 2 to 63 million years ago (radiometric dates). The earlier of the two geologic periods comprising the Cenozoic era.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Thrust fault. A fault with a dip of 45 degrees or less on which the hanging wall appears to have moved upward relative to the footwall.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Tuff. A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

Udic. A soil moisture regime common to a climate that has moisture throughout the year. The soil moisture control section is dry for less than 45 consecutive days during the 4 months following the summer solstice (Soil Survey Staff, 1999).

Umbric epipedon. A thick, dark-colored, humus-rich surface horizon that has low base saturation and pedogenic soil structure. It may include the upper part of the subsoil (Soil Survey Staff, 1999).

Understory. Plants in a forest community that grow to a height of 4.5 feet or less.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Volcanic cone. A volcanic formation built by ejecta from a volcanic vent, piling up around the vent in the shape of a cone with a central crater.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Welded tuff. A glass-rich rock that has been indurated by the welding together of its glass shards under the combined action of the heat retained by particles, the weight of overlying material, and hot gasses.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Xeric. A soil moisture regime common to a climate having moist winters and dry summers. The soils are dry in the moisture control section for more than 45 consecutive days during the 4 months following the summer solstice and are moist for more than 45 consecutive days during the 4 months following the winter solstice (Soil Survey Staff, 1999).

Young forest stage. A forest successional stage in which the overstory vegetation of a stand is dominantly shade-intolerant successional trees. Trees generally are more than 9 inches in diameter at breast height, and the canopy cover exceeds 25 percent. Shade-tolerant climax tree species can be absent to nearly well represented (less than 50 percent).

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971 to 2000 at Craters of the Moon National Monument and Preserve, Idaho [2260])

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January	29.1	10.4	19.8	47	-15	0	1.82	0.67	2.89	4	20.4
February	34.3	14.4	24.4	51	-11	0	1.67	0.48	2.81	4	19.6
March	42.6	21.3	32.0	61	-0	0	1.35	0.49	2.20	3	9.9
April	54.7	28.8	41.8	76	12	24	1.04	0.32	1.65	2	3.2
May	64.9	37.1	51.0	83	20	119	1.79	0.76	2.77	5	2.1
June	75.3	44.7	60.0	92	28	303	1.11	0.26	1.87	3	0.0
July	84.4	51.9	68.2	97	36	554	0.81	0.20	1.25	2	0.0
August	83.3	50.6	66.9	95	35	518	0.78	0.16	1.27	2	0.0
September	72.2	41.1	56.6	89	21	233	0.85	0.20	1.48	2	0.1
October	59.2	31.4	45.3	78	11	42	0.95	0.23	1.62	2	1.3
November	40.0	19.7	29.9	61	-4	0	1.29	0.49	1.94	4	12.2
December	29.7	10.8	20.2	47	-16	0	1.50	0.52	2.48	4	18.4
Yearly:											
Average	55.8	30.2	43.0								
Extreme	100.0	37.0		97	22						
Total						1,794	14.96	10.64	17.58	37	87.3

Average number of days per year with at least 1 inch of snow on the ground: 100

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (Threshold: 50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971 to 2000 at Craters of the Moon National Monument and Preserve, Idaho [2260])

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than	May 14	June 12	July 1
2 years in 10 later than	May 10	June 5	June 24
5 years in 10 later than	May 3	May 22	June 11
First freezing temperature in fall:			
1 year in 10 earlier than	September 17	September 16	August 28
2 years in 10 earlier than	September 24	September 20	September 3
5 years in 10 earlier than	October 7	September 27	September 13

Table 3.--Growing Season

(Recorded in the period 1971 to 2000 at Craters of the Moon National Monument and Preserve, Idaho [2260])

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	130	103	71
8 years in 10	139	111	79
5 years in 10	155	127	94
2 years in 10	171	142	108
1 year in 10	180	150	116

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1	Bancroft silt loam, 1 to 4 percent slopes	247	*
2	Bancroft silt loam, 4 to 8 percent slopes	5,135	0.7
3	Bigcinder ashy sandy loam, 20 to 50 percent slopes	1,733	0.2
3A	Bigcinder ashy sandy loam, 2 to 20 percent slopes	570	*
4	Blackspar-Rock outcrop complex, 45 to 75 percent slopes	89	*
5	Bringmee-Hutton complex, 1 to 4 percent slopes	34	*
6	Carey Lake loam, 0 to 2 percent slopes	23	*
7	Cinder land-Northcrater association, 2 to 50 percent slopes	622	*
8	Cox-Rehfield-Rock outcrop complex, 2 to 15 percent slopes	6,205	0.8
9	Deerhorn-Rehfield-Rock outcrop complex, 2 to 15 percent slopes	26,800	3.6
10	Deerhorn-Wildors complex, 2 to 8 percent slopes	18,565	2.5
11	Deerhorn-Wildors-Rekima complex, 2 to 15 percent slopes	20,018	2.7
12	Deuce-Nargon-Lava flows complex, 2 to 12 percent slopes	2,566	0.3
13	Drage gravelly loam, cool, 2 to 15 percent slopes	525	*
14	Drage very gravelly loam, cool, 0 to 3 percent slopes	3	*
15	Echocrater gravelly ashy loamy sand, 20 to 40 percent slopes	477	*
16	Farmell-Power-Playas complex, 0 to 2 percent slopes	23	*
17	Goodalfs-Craters association, 0 to 5 percent slopes	53	*
18	Goodington-Manard complex, 2 to 8 percent slopes	748	*
19	Hal-Moonville association, 15 to 60 percent slopes	525	*
20	Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes	50	*
21	Huddle-Moonville complex, 2 to 12 percent slopes	3,789	0.5
22	Hutton clay loam, 0 to 2 percent slopes	108	*
23	Infernocone gravelly ashy sandy loam, 2 to 20 percent slopes	66	*
24	Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes	161	*
25	Justesen loam, 2 to 4 percent slopes	9	*
26	Justesen loam, 4 to 8 percent slopes	32	*
27	Justesen-Drage complex, 1 to 20 percent slopes	141	*
28	Lava flows	256,278	34.0
29	Lava flows-Cinderhurst complex, 2 to 15 percent slopes	194,602	25.8
30	Lava flows-Cinderhurst, extremely shallow complex, 2 to 15 percent slopes	6,711	0.9
31	Lavacreek-Dollarhide complex, 15 to 60 percent slopes	404	*
32	Lavacreek-Dollarhide complex, 30 to 60 percent slopes	365	*
33	Lavacreek-Dollarhide complex, cold, 15 to 60 percent slopes	1	*
34	Lavacreek-Dollarhide-Grassycone complex, 30 to 60 percent slopes	657	*
35	Lavacreek-Vitale association, 30 to 60 percent slopes	1,406	0.2
36	McBiggam silt loam, 2 to 8 percent slopes	5,539	0.7
37	McCarey-Beartrap complex, 1 to 6 percent slopes	21,255	2.8
38	McCarey-Beartrap complex, 6 to 20 percent slopes	4,299	0.6
39	McCarey-Beartrap-Rock outcrop complex, 2 to 15 percent slopes	21,735	2.9
40	McCarey-Justesen complex, 2 to 8 percent slopes	37	*
41	McCarey-Molyneux complex, 2 to 8 percent slopes	10,361	1.4
42	McCarey-Molyneux-Rock outcrop complex, 2 to 15 percent slopes	8,975	1.2
43	McCarey-Pedleford complex, 2 to 30 percent slopes	15,166	2.0
44	McCarey-Pedleford complex, 8 to 20 percent slopes	468	*
45	McCarey-Rock outcrop complex, 0 to 12 percent slopes	927	0.1
46	McCarey-Splittop-Lava flows complex, 4 to 8 percent slopes	375	*
47	McPan-Chijer complex, 1 to 6 percent slopes	21,747	2.9
48	Molyneux loam, 2 to 4 percent slopes	1	*
49	Nargon-Atom-Techicknot complex, 0 to 20 percent slopes	3,297	0.4
50	Nargon-Deuce-Lava flows complex, 2 to 20 percent slopes	421	*
51	Neeley-Hodad complex, 2 to 4 percent slopes	12	*
52	Pagari-Rehfield complex, 2 to 15 percent slopes	15,271	2.0
53	Paulville-McPan-Starbuck complex, 1 to 8 percent slopes	4,738	0.6
54	Playas	13	*
55	Portino silt loam, 2 to 4 percent slopes	431	*
56	Portino silt loam, 4 to 8 percent slopes	18	*
57	Portino cobbly loam, 2 to 4 percent slopes, stony	299	*
58	Portino cobbly loam, 4 to 8 percent slopes, stony	53	*
59	Portino, stony-Trevino, stony-Rock outcrop complex, 0 to 12 percent slopes	2,940	0.4

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
60	Portneuf silt loam, bedrock substratum, 0 to 2 percent slopes	57	*
61	Portneuf silt loam, bedrock substratum, 2 to 4 percent slopes	832	0.1
62	Portneuf silt loam, bedrock substratum, 4 to 8 percent slopes	202	*
63	Portneuf-Quincy complex, 0 to 20 percent slopes	512	*
64	Povey-Dollarhide complex, 30 to 60 percent slopes	16	*
65	Quincy-Walco complex, 2 to 12 percent slopes	88	*
66	Rehfield loamy sand, 1 to 6 percent slopes	905	0.1
67	Rock outcrop-Tenno, very stony complex, 0 to 20 percent slopes	596	*
68	Rock outcrop-Tenno, very stony complex, 20 to 60 percent slopes	3	*
69	Rock outcrop-Trevino, stony-Portino, stony complex, 0 to 20 percent slopes	1,841	0.2
70	Roundknoll gravelly ashy loamy sand, 2 to 20 percent slopes	11	*
71	Soen clay loam, 0 to 4 percent slopes	7	*
72	Splittop-Atomic complex, 2 to 8 percent slopes	1,099	0.1
73	Starbuck-Lava flows complex, 2 to 20 percent slopes	6,885	0.9
74	Starbuck-McPan-Rock outcrop complex, 2 to 20 percent slopes	31,756	4.2
75	Sunsetcone gravelly medial loam, 30 to 60 percent slopes	67	*
76	Sunsetcone-Grassycone complex, 30 to 60 percent slopes	93	*
77	Taunton-Paulville complex, 2 to 15 percent slopes	5,276	0.7
78	Techick-Soelberg-Lesbut complex, 0 to 4 percent slopes	252	*
79	Techicknot-Atom-Nargon complex, 0 to 12 percent slopes	3,459	0.5
80	Treemold-Silentcone-Lava flows complex, 2 to 15 percent slopes	343	*
81	Trevino, stony-Portino, stony-Rock outcrop complex, 0 to 20 percent slopes	5,119	0.7
82	Vining-Kecko-Rock outcrop complex, 2 to 12 percent slopes	3,843	0.5
83	Vining-Wapi-Rock outcrop complex, 0 to 12 percent slopes	570	*
84	Vitale-Blackspar complex, 30 to 60 percent slopes	2,908	0.4
85	Water	4	*
	Total	754,863	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification

(Land capability is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating soil resources over a long period of time. "N" means nonirrigated; "I" means irrigated)

Map unit symbol and soil name	Land capability	
	N	I
1:		
Bancroft	3e	---
2:		
Bancroft	3e	---
3:		
Bigcinder	6e	---
3A:		
Bigcinder	4e	---
4:		
Blackspar	7e	---
Rock outcrop	8	---
5:		
Bringmee	3e	---
Hutton	4w	---
6:		
Carey Lake	3c	---
7:		
Cinder land	8	---
Northcrater	7s	---
8:		
Cox	6e	---
Rehfield	3e	---
Rock outcrop	8	---
9:		
Deerhorn	6e	---
Rehfield	3e	---
Rock outcrop	8	---
10:		
Deerhorn	6e	---
Wildors	6s	---
11:		
Deerhorn	6e	---
Wildors	6s	---
Rekima	7s	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
12:		
Deuce	6e	---
Nargon	6e	---
Lava flows	8	---
13:		
Drage, cool	4e	---
14:		
Drage, cool	4e	---
15:		
Echocrater	6e	---
16:		
Farmell	6c	---
Power	6c	---
Playas	7s	---
17:		
Goodalfs	3e	---
Craters	4e	---
18:		
Goodington	3e	---
Manard	6s	---
19:		
Hal	7e	---
Moonville	6e	---
20:		
Howcan	6e	---
Zeebar	6e	---
Hutchley	6e	---
21:		
Huddle	3e	---
Moonville	3e	---
22:		
Hutton	4w	---
23:		
Infernocone	6e	---
24:		
Infernocone	6e	---
25:		
Justesen	3c	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
26:		
Justesen	3e	---
27:		
Justesen	3e	---
Drage	4e	---
28:		
Lava flows	8	---
29:		
Lava flows	8	---
Cinderhurst	7s	---
30:		
Lava flows	8	---
Cinderhurst, extremely shallow	7s	---
31:		
Lavacreek	7e	---
Dollarhide	7s	---
32:		
Lavacreek	7e	---
Dollarhide	7s	---
33:		
Lavacreek, cold	7e	---
Dollarhide, cold	7s	---
34:		
Lavacreek	7e	---
Dollarhide	7s	---
Grassycone	7e	---
35:		
Lavacreek	7e	---
Vitale	7e	---
36:		
McBiggam	3e	---
37:		
McCarey	4s	---
Beartrap	4c	---
38:		
McCarey	4e	---
Beartrap	4e	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
39:		
McCarey	4e	---
Beartrap	4e	---
Rock outcrop	8	---
40:		
McCarey	4e	---
Justesen	3e	---
41:		
McCarey	4e	---
Molyneux	3e	---
42:		
McCarey	4e	---
Molyneux	3e	---
Rock outcrop	8	---
43:		
McCarey	4e	---
Pedleford	6e	---
44:		
McCarey	4e	---
Pedleford	6e	---
45:		
McCarey	4e	---
Rock outcrop	8	---
46:		
McCarey	4e	---
Splittop	4e	---
Lava flows	8	---
47:		
McPan	6c	---
Chijer	6e	---
48:		
Molyneux	3c	---
49:		
Nargon	6e	---
Atom	6e	---
Techicknot	6e	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
50:		
Nargon	6e	---
Deuce	6e	---
Lava flows	8	---
51:		
Neeley	4c	---
Hodad	3e	---
52:		
Pagari	6s	---
Rehfield	3e	---
53:		
Paulville	6e	---
McPan	6e	---
Starbuck	6e	---
54:		
Playas	8	---
55:		
Portino	6s	---
56:		
Portino	6e	---
57:		
Portino, stony surface	6s	---
58:		
Portino, stony surface	6e	---
59:		
Portino, stony surface	6e	---
Trevino, stony surface	6e	---
Rock outcrop	8	---
60:		
Portneuf, bedrock substratum	6c	---
61:		
Portneuf, bedrock substratum	6c	---
62:		
Portneuf, bedrock substratum	6e	---
63:		
Portneuf	6e	---
Quincy	7e	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
64:		
Povey	7e	---
Dollarhide	7s	---
65:		
Quincy	4s	---
Walco	6e	---
66:		
Rehfield	3e	---
67:		
Rock outcrop	8	---
Tenno, very stony surface	6s	---
68:		
Rock outcrop	8	---
Tenno, very stony surface	7e	---
69:		
Rock outcrop	8	---
Trevino, stony surface	6e	---
Portino, stony surface	6e	---
70:		
Roundknoll	6e	---
71:		
Soen	3c	---
72:		
Splittop	4e	---
Atomic	6e	---
73:		
Starbuck	6e	---
Lava flows	8	---
74:		
Starbuck	6e	---
McPan	6e	---
Rock outcrop	8	---
75:		
Sunsetcone	6e	---
76:		
Sunsetcone	7e	---
Grassycone	7e	---

Table 5.--Land Capability Classification--Continued

Map unit symbol and soil name	Land capability	
	N	I
77:		
Taunton	6e	---
Paulville	6e	---
78:		
Techick	4c	---
Soelberg	6c	---
Lesbut	6s	---
79:		
Techicknot	4e	---
Atom	6e	---
Nargon	6e	---
80:		
Treemold	7s	---
Silentcone	6s	---
Lava flows	8	---
81:		
Trevino, stony surface	6e	---
Portino, stony surface	6e	---
Rock outcrop	8	---
82:		
Vining	6e	---
Kecko	6e	---
Rock outcrop	8	---
83:		
Vining	6e	---
Wapi	7s	---
Rock outcrop	8	---
84:		
Vitale	6e	---
Blackspar	7e	---
85:		
Water	8	---

Table 6.--Ecological Sites and Characteristic Plant Communities

(Composition of range vegetation is based on percent dry weight. Miscellaneous land type components such as Lava flows and Rock outcrop do not support vegetation; thus, they are not assigned to an ecological site and are not shown in this table)

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
1:					
Bancroft (90 percent)	LOAMY 12-16 ARTR4/FEID (R010AY023ID)	Favorable	1,050	Idaho fescue	30
		Normal	800	Threetip sagebrush	20
		Unfavorable	550	Bluebunch wheatgrass	10
				Antelope bitterbrush	5
				Basin big sagebrush	5
				Basin wildrye	5
				Lupine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Prairie Junegrass	5
2:					
Bancroft (90 percent)	LOAMY 12-16 ARTR4/FEID (R010AY023ID)	Favorable	1,050	Idaho fescue	30
		Normal	800	Threetip sagebrush	20
		Unfavorable	550	Bluebunch wheatgrass	10
				Antelope bitterbrush	5
				Basin big sagebrush	5
				Basin wildrye	5
				Lupine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Prairie Junegrass	5
3:					
Bigcinder (95 percent)	Cinder North 12-16 PIFL2/PUTR2 (R010AY043ID)	Favorable	700	Antelope bitterbrush	15
		Normal	600	Limber pine	15
		Unfavorable	500	Mountain big sagebrush	15
				Other perennial forbs	5
				Other perennial grasses	5
				Rubber rabbitbrush	5
3A:					
Bigcinder (90 percent)	Cinder 12-16 PIFL2/ARTRV (R010AY044ID)	Favorable	800	Mountain big sagebrush	15
		Normal	600	Antelope bitterbrush	10
		Unfavorable	400	Limber pine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Rubber rabbitbrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
4:					
Blackspar (50 percent)	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)	Favorable	400	Low sagebrush	25
		Normal	250	Sandberg bluegrass	20
		Unfavorable	200	Bluebunch wheatgrass	20
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Forb, annual	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
5:					
Bringmee (50 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
Hutton (30 percent)	WET MEADOW CAREX-JUNCUS (R010AY039ID)	Favorable	3,500	Sedge	25
		Normal	2,000	Slender wheatgrass	15
		Unfavorable	1,600	Tufted hairgrass	15
				Basin wildrye	5
				Bluegrass	5
				Mountain brome	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Rush	5
				Shrubby cinquefoil	5
				Willow	5
6:					
Carey Lake (90 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
7:					
Northcrater (45 percent)--------	Cinder Garden 12-16 EROVD-LERE7 (R010AY046ID)	Favorable	60	Cushion buckwheat	60
		Normal	50	Bitter root	10
		Unfavorable	40	Phacelia	10
				Tapertip onion	10
8:					
Cox (35 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)	Favorable	700	Bluebunch wheatgrass	35
		Normal	500	Basin big sagebrush	25
		Unfavorable	275	Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Other shrubs	5
Rehfield (30 percent)--------	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
9:					
Deerhorn (40 percent)--------	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Rehfield (30 percent)--------	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
10:					
Deerhorn (45 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Wildors (30 percent)	STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)	Favorable	800	Bluebunch wheatgrass	30
		Normal	600	Basin big sagebrush	20
		Unfavorable	350	Other perennial grasses	10
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Other perennial forbs	5
				Spineless horsebrush	5
				Sandberg bluegrass	3
				Lupine	2
11:					
Deerhorn (40 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Wildors (30 percent)	STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)	Favorable	800	Bluebunch wheatgrass	30
		Normal	600	Basin big sagebrush	20
		Unfavorable	350	Other perennial grasses	10
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Other perennial forbs	5
				Spineless horsebrush	5
				Sandberg bluegrass	3
				Lupine	2
Rekima (20 percent)	SHALLOW LOAMY 8-12 ARTRW8/PSSPS (R011XY004ID)	Favorable	650	Wyoming big sagebrush	30
		Normal	500	Bluebunch wheatgrass	30
		Unfavorable	275	Thurber needlegrass	10
				Other perennial forbs	10
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
12:					
Deuce (45 percent)-------	SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)	Favorable	650	Wyoming big sagebrush	25
		Normal	450	Bluebunch wheatgrass	20
		Unfavorable	300	Sandberg bluegrass	10
				Thurber needlegrass	5
				Threetip sagebrush	5
Nargon (20 percent)-------	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
13:					
Drage, cool (80 percent)-------	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
14:					
Drage, cool (85 percent)-------	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
15:					
Echocrater (85 percent)-------	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)	Favorable	1,800	Antelope bitterbrush	10
		Normal	1,400	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Needle and thread	10
				Phlox	10
				Serviceberry	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
16:					
Farmell (55 percent)	PLAYA 8-12 ARTR4/PSSPS (R011BY008ID)	Favorable	700	Threetip sagebrush	20
		Normal	450	Sedge	15
		Unfavorable	300	Arrowleaf balsamroot	10
				Bluebunch wheatgrass	10
				Other perennial forbs	10
				Wheatgrass	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
Power (20 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
17:					
Goodalfs (55 percent)	Loamy Bottom 12-16 LECI4 (R010AY042ID)	Favorable	5,000	Basin wildrye	80
		Normal	4,000	Mountain big sagebrush	5
		Unfavorable	3,000	Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Craters (40 percent)	Cindery North 12-16 ARTRV-PUTR2/FEID-PSSPS (R010AY047ID)	Favorable	1,300	Idaho fescue	25
		Normal	1,100	Bluebunch wheatgrass	25
		Unfavorable	900	Antelope bitterbrush	15
				Mountain big sagebrush	15
18:					
Goodington (45 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
18:					
Manard (40 percent)-------	CLAYEY 12-16 ARARL/FEID (R010AY001ID)	Favorable	550	Idaho fescue	25
		Normal	450	Alkali sagebrush	25
		Unfavorable	300	Narrowleaf pussytoes	10
				Other perennial forbs	10
				Hood's phlox	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Western needlegrass	5
19:					
Hal (60 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
Moonville (25 percent)-------	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
20:					
Howcan (35 percent)-------	LOAMY 12-16 ARTRV/FEID-PSSPS (R012XY012ID)	Favorable	1,100	Bluebunch wheatgrass	40
		Normal	900	Mountain big sagebrush	10
		Unfavorable	600	Idaho fescue	5
				Arrowleaf balsamroot	5
				Prairie Junegrass	5
Zeebar (25 percent)-------	LOAMY 16-22 ARTRV/FEID (R012XY021ID)	Favorable	1,500	Idaho fescue	40
		Normal	800	Mountain big sagebrush	15
		Unfavorable	500	Bluebunch wheatgrass	10
				Other perennial forbs	10
				Arrowleaf balsamroot	5
				Mountain brome	5
				Other perennial grasses	5
				Other shrubs	5
				Slender wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
20:					
Hutchley (20 percent)	CLAYEY SOUTH SLOPE 12-16 ARAR8/PSSPS (R012XY029ID)	Favorable	750	Low sagebrush	30
		Normal	425	Bluebunch wheatgrass	25
		Unfavorable	300	Hooker's balsamroot	10
				Other perennial grasses	10
				Hood's phlox	5
				Sandberg bluegrass	5
				Dwarf green rabbitbrush	5
				Other perennial forbs	5
				Other shrubs	5
21:					
Huddle (65 percent)	LOAMY 12-16 ARTRT/LECI4 (R011BY007ID)	Favorable	1,500	Basin wildrye	45
		Normal	1,200	Bluebunch wheatgrass	20
		Unfavorable	600	Idaho fescue	5
				Wheeler bluegrass	5
				Arrowleaf balsamroot	5
				Basin big sagebrush	5
				Longleaf hawksbeard	5
				Lupine	5
				Purple milkwort	5
Moonville (20 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
22:					
Hutton (90 percent)	WET MEADOW CAREX-JUNCUS (R010AY039ID)	Favorable	3,500	Sedge	25
		Normal	2,000	Slender wheatgrass	15
		Unfavorable	1,600	Tufted hairgrass	15
				Basin wildrye	5
				Bluegrass	5
				Mountain brome	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Rush	5
				Shrubby cinquefoil	5
				Willow	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
23:					
Infernocone (85 Percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
24:					
Infernocone (90 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
25:					
Justesen (90 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
26:					
Justesen (90 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
27:					
Justesen (45 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
Drage (40 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
29:					
Cinderhurst (20 percent)	MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)	Favorable	450	Mountain big sagebrush	55
		Normal	300	Nevada bluegrass	5
		Unfavorable	100	Wyeth buckwheat	5
				Antelope bitterbrush	5
				Chokecherry	5
				Fernbush	5
				Mountain snowberry	5
				Other perennial forbs	5
				Other perennial grasses	5
				Penstemon	5
30:					
Cinderhurst, extremely shallow (20 percent)	MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)	Favorable	450	Mountain big sagebrush	55
		Normal	300	Nevada bluegrass	5
		Unfavorable	100	Wyeth buckwheat	5
				Antelope bitterbrush	5
				Chokecherry	5
				Fernbush	5
				Mountain snowberry	5
				Other perennial forbs	5
				Other perennial grasses	5
				Penstemon	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
31:					
Lavacreek (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
Dollarhide (25 percent)	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)	Favorable	750	Idaho fescue	30
		Normal	600	Hotsprings sagebrush	25
		Unfavorable	400	Other perennial grasses	15
				Other perennial forbs	10
				Bluebunch wheatgrass	5
				Low sagebrush	5
				Mountain big sagebrush	5
				Other shrubs	5
32:					
Lavacreek (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
Dollarhide (20 percent)	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)	Favorable	750	Idaho fescue	30
		Normal	600	Hotsprings sagebrush	25
		Unfavorable	400	Other perennial grasses	15
				Other perennial forbs	10
				Bluebunch wheatgrass	5
				Low sagebrush	5
				Mountain big sagebrush	5
				Other shrubs	5
33:					
Lavacreek, cold (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
33:					
Dollarhide, cold (25 percent)---	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)	Favorable	750	Idaho fescue	30
		Normal	600	Hotsprings sagebrush	25
		Unfavorable	400	Other perennial grasses	15
				Other perennial forbs	10
				Bluebunch wheatgrass	5
				Low sagebrush	5
				Mountain big sagebrush	5
				Other shrubs	5
34:					
Lavacreek (45 percent)-------	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
Dollarhide (20 percent)-------	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)	Favorable	750	Idaho fescue	30
		Normal	600	Hotsprings sagebrush	25
		Unfavorable	400	Other perennial grasses	15
				Other perennial forbs	10
				Bluebunch wheatgrass	5
				Low sagebrush	5
				Mountain big sagebrush	5
				Other shrubs	5
Grassycone (20 percent)-------	QUAKING ASPEN 20+ POTR5 (R010AY016ID)	Favorable	800	Pinegrass	25
		Normal	550	Mountain brome	10
		Unfavorable	350	Other perennial forbs	10
				Other perennial grasses	10
				Quaking aspen	10
				Idaho fescue	5
				Antelope bitterbrush	5
				Biscuitroot	5
				Bluebunch wheatgrass	5
				Cinquefoil	5
				Mountain big sagebrush	5
				Other shrubs	5
35:					
Lavacreek (45 percent)-------	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
35:					
Vitale (35 percent)	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	800	Mountain big sagebrush	25
		Unfavorable	450	Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Basin wildrye	5
				Lupine	5
				Mountain snowberry	5
				Other perennial grasses	5
				Other shrubs	5
36:					
McBiggam (90 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)	Favorable	1,050	Mountain big sagebrush	20
		Normal	800	Idaho fescue	15
		Unfavorable	600	Bluebunch wheatgrass	15
				Other perennial forbs	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needlegrass	5
				Other perennial grasses	5
				Other shrubs	5
37:					
McCarey (45 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Beartrap (35 percent)	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)	Favorable	1,600	Basin wildrye	50
		Normal	1,200	Basin big sagebrush	15
		Unfavorable	800	Nevada bluegrass	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial forbs	5
				Other shrubs	5
				Wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
38:					
McCarey (55 percent)-------	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Beartrap (20 percent)-------	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)	Favorable	1,600	Basin wildrye	50
		Normal	1,200	Basin big sagebrush	15
		Unfavorable	800	Nevada bluegrass	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial forbs	5
				Other shrubs	5
				Wheatgrass	5
39:					
McCarey (40 percent)-------	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Beartrap (30 percent)-------	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)	Favorable	1,600	Basin wildrye	50
		Normal	1,200	Basin big sagebrush	15
		Unfavorable	800	Nevada bluegrass	5
				Sandberg bluegrass	5
				Bottlebrush squirreltail	5
				Other perennial forbs	5
				Other shrubs	5
				Wheatgrass	5
40:					
McCarey (50 percent)-------	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
40:					
Justesen (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
41:					
McCarey (45 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Molyneux (30 percent)	LOAMY 12-16 ARTR4/FEID (R010AY023ID)	Favorable	1,050	Idaho fescue	30
		Normal	800	Threetip sagebrush	20
		Unfavorable	550	Bluebunch wheatgrass	10
				Antelope bitterbrush	5
				Basin big sagebrush	5
				Basin wildrye	5
				Lupine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Prairie Junegrass	5
42:					
McCarey (40 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
42:					
Molyneux (25 percent)	LOAMY 12-16 ARTR4/FEID (R010AY023ID)	Favorable	1,050	Idaho fescue	30
		Normal	800	Threetip sagebrush	20
		Unfavorable	550	Bluebunch wheatgrass	10
				Antelope bitterbrush	5
				Basin big sagebrush	5
				Basin wildrye	5
				Lupine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Prairie Junegrass	5
43:					
McCarey (50 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Pedleford (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
44:					
McCarey (55 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
44:					
Pedleford (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
45:					
McCarey (55 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
46:					
McCarey (60 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Splittop (20 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
47:					
McPan (50 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)	Favorable	1,100	Thurber needlegrass	20
		Normal	700	Wyoming big sagebrush	20
		Unfavorable	500	Bluebunch wheatgrass	20
				Other perennial forbs	10
				Other shrubs	10
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
Chijer (30 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)	Favorable	1,100	Thurber needlegrass	20
		Normal	700	Wyoming big sagebrush	20
		Unfavorable	500	Bluebunch wheatgrass	20
				Other perennial forbs	10
				Other shrubs	10
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
48:					
Molyneux (90 percent)	LOAMY 12-16 ARTR4/FEID (R010AY023ID)	Favorable	1,050	Idaho fescue	30
		Normal	800	Threetip sagebrush	20
		Unfavorable	550	Bluebunch wheatgrass	10
				Antelope bitterbrush	5
				Basin big sagebrush	5
				Basin wildrye	5
				Lupine	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Prairie Junegrass	5
49:					
Nargon (35 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Atom (30 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
49:					
Techicknot (25 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
50:					
Nargon (50 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Deuce (25 percent)	SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)	Favorable	650	Wyoming big sagebrush	25
		Normal	450	Bluebunch wheatgrass	20
		Unfavorable	300	Sandberg bluegrass	10
				Thurber needlegrass	5
				Threetip sagebrush	5
51:					
Neeley (60 percent)	LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Mountain big sagebrush	15
		Unfavorable	800	Streambank wheatgrass	10
				Idaho fescue	5
				Kentucky bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
Hodad (30 percent)	LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)	Favorable	1,800	Bluebunch wheatgrass	35
		Normal	1,200	Mountain big sagebrush	15
		Unfavorable	800	Streambank wheatgrass	10
				Idaho fescue	5
				Kentucky bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
52:					
Pagari (45 percent)	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)	Favorable	900	Basin big sagebrush	20
		Normal	750	Basin wildrye	15
		Unfavorable	650	Bluebunch wheatgrass	15
				Sandberg bluegrass	10
				Other perennial forbs	10
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
				Other shrubs	5
				Shortspine horsebrush	5
Rehfield (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
53:					
Paulville (35 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
McPan (25 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)	Favorable	1,100	Thurber needlegrass	20
		Normal	700	Wyoming big sagebrush	20
		Unfavorable	500	Bluebunch wheatgrass	20
				Other perennial forbs	10
				Other shrubs	10
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
Starbuck (20 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)	Favorable	700	Bluebunch wheatgrass	35
		Normal	500	Basin big sagebrush	25
		Unfavorable	275	Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
55:					
Portino (90 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
56:					
Portino (90 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
57:					
Portino, stony surface (90 percent)	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
58:					
Portino, stony surface (90 percent)	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
59:					
Portino, stony surface (40 percent)-------	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Trevino, stony surface (25 percent)-------	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)	Favorable	800	Bluebunch wheatgrass	25
		Normal	600	Low sagebrush	15
		Unfavorable	350	Nevada bluegrass	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needle and thread	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Western wheatgrass	5
60:					
Portneuf, bedrock substratum (90 percent)-------	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
61:					
Portneuf, bedrock substratum (90 percent)-------	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
62:					
Portneuf, bedrock substratum (90 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
63:					
Portneuf (60 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Quincy (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
64:					
Povey (55 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)	Favorable	1,625	Idaho fescue	30
		Normal	1,300	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Nevada bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Common snowberry	5
				Longleaf hawksbeard	5
				Prairie Junegrass	5
Dollarhide (25 percent)	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)	Favorable	750	Idaho fescue	30
		Normal	600	Hotsprings sagebrush	25
		Unfavorable	400	Other perennial grasses	15
				Other perennial forbs	10
				Bluebunch wheatgrass	5
				Low sagebrush	5
				Mountain big sagebrush	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
65:					
Quincy (50 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
Walco (35 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
66:					
Rehfield (75 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
67:					
Tenno, very stony surface (25 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)	Favorable	800	Bluebunch wheatgrass	25
		Normal	600	Low sagebrush	15
		Unfavorable	350	Nevada bluegrass	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needle and thread	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Western wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
68:					
Tenno, very stony surface (25 percent)---	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)	Favorable	800	Bluebunch wheatgrass	25
		Normal	600	Low sagebrush	15
		Unfavorable	350	Nevada bluegrass	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needle and thread	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Western wheatgrass	5
69:					
Trevino, stony surface (25 percent)-------	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)	Favorable	800	Bluebunch wheatgrass	25
		Normal	600	Low sagebrush	15
		Unfavorable	350	Nevada bluegrass	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needle and thread	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Western wheatgrass	5
Portino, stony surface (15 percent)-------	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
70:					
Roundknoll (80 percent)-------	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)	Favorable	1,800	Antelope bitterbrush	10
		Normal	1,400	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Needle and thread	10
				Phlox	10
				Serviceberry	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
71:					
Soen (80 percent)	LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	700	Wyoming big sagebrush	15
		Unfavorable	450	Sandberg bluegrass	5
				Basin big sagebrush	5
				Longleaf hawksbeard	5
72:					
Splittop (50 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Atomic (30 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
73:					
Starbuck (50 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)	Favorable	700	Bluebunch wheatgrass	35
		Normal	500	Basin big sagebrush	25
		Unfavorable	275	Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Other shrubs	5
74:					
Starbuck (40 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)	Favorable	700	Bluebunch wheatgrass	35
		Normal	500	Basin big sagebrush	25
		Unfavorable	275	Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
74:					
McPan (30 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)	Favorable	1,100	Thurber needlegrass	20
		Normal	700	Wyoming big sagebrush	20
		Unfavorable	500	Bluebunch wheatgrass	20
				Other perennial forbs	10
				Other shrubs	10
				Sandberg bluegrass	5
				Arrowleaf balsamroot	5
				Bottlebrush squirreltail	5
				Other perennial grasses	5
75:					
Sunsetcone (85 percent)	MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)	Favorable	500	Rocky Mountain Douglas-Fir	25
		Normal	350		
		Unfavorable	150	Mountain snowberry	15
				Heartleaf arnica	5
				Mallow ninebark	5
				Myrtle pachistima	5
				Pinegrass	5
76:					
Sunsetcone (50 percent)	MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)	Favorable	500	Rocky Mountain Douglas-Fir	25
		Normal	350		
		Unfavorable	150	Mountain snowberry	15
				Heartleaf arnica	5
				Mallow ninebark	5
				Myrtle pachistima	5
				Pinegrass	5
Grassycone (40 percent)	QUAKING ASPEN 20+ POTR5 (R010AY016ID)	Favorable	800	Pinegrass	25
		Normal	550	Mountain brome	10
		Unfavorable	350	Other perennial forbs	10
				Other perennial grasses	10
				Quaking aspen	10
				Idaho fescue	5
				Antelope bitterbrush	5
				Biscuitroot	5
				Bluebunch wheatgrass	5
				Cinquefoil	5
				Mountain big sagebrush	5
				Other shrubs	5
77:					
Taunton (50 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
77:					
Paulville (30 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
78:					
Techick (40 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Soelberg (35 percent)	GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)	Favorable	725	Bluebunch wheatgrass	30
		Normal	425	Wyoming big sagebrush	15
		Unfavorable	275	Phlox	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Needle and thread	5
				Prairie Junegrass	5
				Rabbitbrush	5
				Thickspike wheatgrass	5
Lesbut (15 percent)	GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)	Favorable	725	Bluebunch wheatgrass	30
		Normal	425	Wyoming big sagebrush	15
		Unfavorable	275	Phlox	10
				Nevada bluegrass	5
				Sandberg bluegrass	5
				Balsamroot	5
				Longleaf hawksbeard	5
				Lupine	5
				Needle and thread	5
				Prairie Junegrass	5
				Rabbitbrush	5
				Thickspike wheatgrass	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
79:					
Techicknot (45 percent)	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)	Favorable	1,500	Bluebunch wheatgrass	25
		Normal	1,000	Wyoming big sagebrush	20
		Unfavorable	600	Other perennial grasses	10
				Nevada bluegrass	5
				Arrowleaf balsamroot	5
				Lupine	5
				Other perennial forbs	5
				Other shrubs	5
				Prairie Junegrass	5
				Threetip sagebrush	5
				Western wheatgrass	5
Atom (25 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
Nargon (20 percent)	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)	Favorable	1,200	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
80:					
Treemold (45 percent)	Very Shallow Loam 12-16 ARAR8/POSE (R010AY050ID)	Favorable	300	Sandberg bluegrass	65
		Normal	200	Low sagebrush	15
		Unfavorable	125		
Silentcone (35 percent)	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)	Favorable	1,800	Antelope bitterbrush	10
		Normal	1,400	Bluebunch wheatgrass	10
		Unfavorable	1,000	Mountain big sagebrush	10
				Needle and thread	10
				Phlox	10
				Serviceberry	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
81:					
Trevino, stony surface (40 percent)-------	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)	Favorable	800	Bluebunch wheatgrass	25
		Normal	600	Low sagebrush	15
		Unfavorable	350	Nevada bluegrass	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Lupine	5
				Needle and thread	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
				Western wheatgrass	5
Portino, stony surface (30 percent)-------	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	750	Wyoming big sagebrush	25
		Unfavorable	400	Sandberg bluegrass	10
				Thurber needlegrass	10
				Indian ricegrass	5
				Nevada bluegrass	5
				Longleaf hawksbeard	5
				Needle and thread	5
				Threetip sagebrush	5
82:					
Vining (35 percent)-------	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Kecko (30 percent)-------	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5

Table 6.--Ecological Sites and Characteristic Plant Communities--Continued

Map unit symbol and soil name (percentage of (map unit)	Ecological site name and number	Total production		Characteristic vegetation	Rangeland composition
		Kind of year	Dry weight		
			Lb/ac		*Pct*
83:					
Vining (40 percent)	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)	Favorable	1,000	Bluebunch wheatgrass	35
		Normal	750	Basin big sagebrush	20
		Unfavorable	600	Sandberg bluegrass	10
				Arrowleaf balsamroot	5
				Longleaf hawksbeard	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5
Wapi (20 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)	Favorable	950	Basin big sagebrush	25
		Normal	650	Needle and thread	20
		Unfavorable	450	Indian ricegrass	15
				Other perennial forbs	10
				Sandberg bluegrass	5
				Thurber needlegrass	5
				Bluebunch wheatgrass	5
				Bottlebrush squirreltail	5
				Gray rabbitbrush	5
				Little larkspur	5
84:					
Vitale (45 percent)	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)	Favorable	1,100	Bluebunch wheatgrass	30
		Normal	800	Mountain big sagebrush	25
		Unfavorable	450	Sandberg bluegrass	5
				Antelope bitterbrush	5
				Arrowleaf balsamroot	5
				Basin wildrye	5
				Lupine	5
				Mountain snowberry	5
				Other perennial grasses	5
				Other shrubs	5
Blackspar (35 percent)	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)	Favorable	400	Low sagebrush	25
		Normal	250	Sandberg bluegrass	20
		Unfavorable	200	Bluebunch wheatgrass	20
				Hood's phlox	5
				Thurber needlegrass	5
				Bottlebrush squirreltail	5
				Forb, annual	5
				Other perennial forbs	5
				Other perennial grasses	5
				Other shrubs	5

Table 7.--Plants by Symbol

(Plants shown in this table are in the National Soils Information System (NASIS) plant tables used for this soil survey. The common and scientific names are referenced in the U.S. Department of Agriculture PLANTS database available at plants.usda.gov)

Plant symbol	Local common name	Scientific name
2FA	Forb, annual	
ACHNA	Needlegrass	*Achnatherum*
ACHY	Indian ricegrass	*Achnatherum hymenoides*
ACOCO	Western needlegrass	*Achnatherum occidentale ssp. occidentale*
ACTH7	Thurber needlegrass	*Achnatherum thurberianum*
AGCAM2	Slender wheatgrass	*Agropyron caninum var. majus latiglume*
AGDAR	Streambank wheatgrass	*Agropyron dasystachyum var. riparium*
AGROP2	Wheatgrass	*Agropyron*
ALAC4	Tapertip onion	*Allium acuminatum*
AMELA	Serviceberry	*Amelanchier*
ANST2	Narrowleaf pussytoes	*Antennaria stenophylla*
ARAR8	Low sagebrush	*Artemisia arbuscula*
ARARL	Alkali sagebrush	*Artemisia arbuscula ssp. longiloba*
ARART	Hotsprings sagebrush	*Artemisia arbuscula var. thermopola*
ARCO9	Heartleaf arnica	*Arnica cordifolia*
ARTR2	Big sagebrush	*Artemisia tridentata*
ARTR4	Threetip sagebrush	*Artemisia tripartita*
ARTRT	Basin big sagebrush	*Artemisia tridentata var. tridentata*
ARTRV	Mountain big sagebrush	*Artemisia tridentata ssp. vaseyana*
ARTRW8	Wyoming big sagebrush	*Artemisia tridentata ssp. wyomingensis*
BAHO	Hooker's balsamroot	*Balsamorhiza hookeri*
BALSA	Balsamroot	*Balsamorhiza*
BASA3	Arrowleaf balsamroot	*Balsamorhiza sagittata*
BRMA4	Mountain brome	*Bromus marginatus*
CAREX	Sedge	*Carex*
CARU	Pinegrass	*Calamagrostis rubescens*
CHMI2	Fernbush	*Chamaebatiaria millefolium*
CHRYS9	Rabbitbrush	*Chrysothamnus*
CHVI8	Green rabbitbrush	*Chrysothamnus viscidiflorus*
CHVIP7	Dwarf green rabbitbrush	*Chrysothamnus viscidiflorus var. pumilus*
CRAC2	Longleaf hawksbeard	*Crepis acuminata*
DAFL3	Shrubby cinquefoil	*Dasiphora floribunda*
DEBI	Little larkspur	*Delphinium bicolor*
DECE	Tufted hairgrass	*Deschampsia caespitosa*
ELELE	Bottlebrush squirreltail	*Elymus elymoides ssp. elymoides*
ELLAL	Thickspike wheatgrass	*Elymus lanceolatus ssp. lanceolatus*
ELTRT	Slender wheatgrass	*Elymus trachycaulus ssp. trachycaulus*
ERHE2	Wyeth buckwheat	*Eriogonum heracleoides*
ERNA10	Rubber rabbitbrush	*Ericameria nauseosa*
ERNAN5	Gray rabbitbrush	*Ericameria nauseosa ssp. nauseosa var. nauseosa*
EROVD	Cushion buckwheat	*Eriogonum ovalifolium var. depressum*
FEID	Idaho fescue	*Festuca idahoensis*
HECOC8	Needle and thread	*Hesperostipa comata ssp. comata*
JUNCU	Rush	*Juncus*
KOMA	Prairie Junegrass	*Koeleria macrantha*
LECI4	Basin wildrye	*Leymus cinereus*
LERE7	Bitter root	*Lewisia rediviva*
LOMAT	Biscuitroot	*Lomatium*
LUPIN	Lupine	*Lupinus*
PAMY	Myrtle pachistima	*Paxistima myrsinites*
PASM	Western wheatgrass	*Pascopyrum smithii*
PENST	Penstemon	*Penstemon*
PHACE	Phacelia	*Phacelia*
PHHO	Hood's phlox	*Phlox hoodii*
PHLOX	Phlox	*Phlox*
PHMA5	Mallow ninebark	*Physocarpus malvaceus*
PIFL2	Limber pine	*Pinus flexilis*
POA	Bluegrass	*Poa*

Table 7.--Plants by Symbol--Continued

Plant symbol	Local common name	Scientific name
PONE2	Wheeler bluegrass	*Poa nervosa*
PONE3	Nevada bluegrass	*Poa secunda*
POPR	Kentucky bluegrass	*Poa pratensis*
POSA3	Purple milkwort	*Polygala sanguinea*
POSE	Sandberg bluegrass	*Poa secunda*
POTEN	Cinquefoil	*Potentilla*
POTR5	Quaking aspen	*Populus tremuloides*
PPFF	Other perennial forbs	
PPGG	Other perennial grasses	
PRVI	Chokecherry	*Prunus virginiana*
PSMEG	Rocky Mountain Douglas-fir	*Pseudotsuga menziesii var. glauca*
PSSP6	Bluebunch wheatgrass	*Pseudoroegneria spicata*
PSSPS	Bluebunch wheatgrass	*Pseudoroegneria spicata ssp. spicata*
PUTR2	Antelope bitterbrush	*Purshia tridentata*
SALIX	Willow	*Salix*
SSSS	Other shrubs	
SYAL	Common snowberry	*Symphoricarpos albus*
SYOR2	Mountain snowberry	*Symphoricarpos oreophilus*
TECA2	Spineless horsebrush	*Tetradymia canescens*
TESP2	Shortspine horsebrush	*Tetradymia spinosa*

Table 8.--Plants by Common Name

(Plants shown in this table are in the National Soils Information System (NASIS) plant tables used for this soil survey. The scientific and common names are referenced in the U.S. Department of Agriculture PLANTS database available at plants.usda.gov)

Local common name	Symbol	Scientific name
Alkali sagebrush	ARARL	*Artemisia arbuscula ssp. longiloba*
Antelope bitterbrush	PUTR2	*Purshia tridentata*
Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata*
Balsamroot	BALSA	*Balsamorhiza*
Basin big sagebrush	ARTRT	*Artemisia tridentata var. tridentata*
Basin wildrye	LECI4	*Leymus cinereus*
Big sagebrush	ARTR2	*Artemisia tridentata*
Biscuitroot	LOMAT	*Lomatium*
Bitter root	LERE7	*Lewisia rediviva*
Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*
Bluebunch wheatgrass	PSSPS	*Pseudoroegneria spicata ssp. spicata*
Bluegrass	POA	*Poa*
Bottlebrush squirreltail	ELELE	*Elymus elymoides ssp. elymoides*
Chokecherry	PRVI	*Prunus virginiana*
Cinquefoil	POTEN	*Potentilla*
Common snowberry	SYAL	*Symphoricarpos albus*
Cushion buckwheat	EROVD	*Eriogonum ovalifolium var. depressum*
Dwarf green rabbitbrush	CHVIP7	*Chrysothamnus viscidiflorus var. pumilus*
Fernbush	CHMI2	*Chamaebatiaria millefolium*
Forb, annual	2FA	
Gray rabbitbrush	ERNAN5	*Ericameria nauseosa ssp. nauseosa var. nauseosa*
Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus*
Heartleaf arnica	ARCO9	*Arnica cordifolia*
Hood's phlox	PHHO	*Phlox hoodii*
Hooker's balsamroot	BAHO	*Balsamorhiza hookeri*
Hotsprings sagebrush	ARART	*Artemisia arbuscula var. thermopola*
Idaho fescue	FEID	*Festuca idahoensis*
Indian ricegrass	ACHY	*Achnatherum hymenoides*
Kentucky bluegrass	POPR	*Poa pratensis*
Limber pine	PIFL2	*Pinus flexilis*
Little larkspur	DEBI	*Delphinium bicolor*
Longleaf hawksbeard	CRAC2	*Crepis acuminata*
Low sagebrush	ARAR8	*Artemisia arbuscula*
Lupine	LUPIN	*Lupinus*
Mallow ninebark	PHMA5	*Physocarpus malvaceus*
Mountain big sagebrush	ARTRV	*Artemisia tridentata ssp. vaseyana*
Mountain brome	BRMA4	*Bromus marginatus*
Mountain snowberry	SYOR2	*Symphoricarpos oreophilus*
Myrtle pachistima	PAMY	*Paxistima myrsinites*
Narrowleaf pussytoes	ANST2	*Antennaria stenophylla*
Needle and thread	HECOC8	*Hesperostipa comata ssp. comata*
Needlegrass	ACHNA	*Achnatherum*
Nevada bluegrass	PONE3	*Poa secunda*
Other perennial forbs	PPFF	
Other perennial grasses	PPGG	
Other shrubs	SSSS	
Penstemon	PENST	*Penstemon*
Phacelia	PHACE	*Phacelia*
Phlox	PHLOX	*Phlox*
Pinegrass	CARU	*Calamagrostis rubescens*
Prairie Junegrass	KOMA	*Koeleria macrantha*
Purple milkwort	POSA3	*Polygala sanguinea*
Quaking aspen	POTR5	*Populus tremuloides*
Rabbitbrush	CHRYS9	*Chrysothamnus*
Rocky Mountain Douglas-fir	PSMEG	*Pseudotsuga menziesii var. glauca*
Rubber rabbitbrush	ERNA10	*Ericameria nauseosa*
Rush	JUNCU	*Juncus*
Sandberg bluegrass	POSE	*Poa secunda*

Table 8.--Plants by Common Name--Continued

Local common name	Symbol	Scientific name
Sedge	CAREX	*Carex*
Serviceberry	AMELA	*Amelanchier*
Shortspine horsebrush	TESP2	*Tetradymia spinosa*
Shrubby cinquefoil	DAFL3	*Dasiphora floribunda*
Slender wheatgrass	AGCAM2	*Agropyron caninum var. majus latiglume*
Slender wheatgrass	ELTRT	*Elymus trachycaulus ssp. trachycaulus*
Spineless horsebrush	TECA2	*Tetradymia canescens*
Streambank wheatgrass	AGDAR	*Agropyron dasystachyum var. riparium*
Tapertip onion	ALAC4	*Allium acuminatum*
Thickspike wheatgrass	ELLAL	*Elymus lanceolatus ssp. lanceolatus*
Threetip sagebrush	ARTR4	*Artemisia tripartita*
Thurber needlegrass	ACTH7	*Achnatherum thurberianum*
Tufted hairgrass	DECE	*Deschampsia caespitosa*
Western needlegrass	ACOCO	*Achnatherum occidentale ssp. occidentale*
Western wheatgrass	PASM	*Pascopyrum smithii*
Wheatgrass	AGROP2	*Agropyron*
Wheeler bluegrass	PONE2	*Poa nervosa*
Willow	SALIX	*Salix*
Wyeth buckwheat	ERHE2	*Eriogonum heracleoides*
Wyoming big sagebrush	ARTRW8	*Artemisia tridentata ssp. Wyomingensis*

Table 9.--Ecological Site—Soil Correlation

(Miscellaneous land type components such as Lava flows and Rock outcrop do not support vegetation; thus, they are not assigned to an ecological site and are not shown in this table)

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
1:			
Bancroft (90 percent)	LOAMY 12-16 ARTR4/FEID	Rangeland	R010AY023ID
2:			
Bancroft (90 percent)	LOAMY 12-16 ARTR4/FEID	Rangeland	R010AY023ID
3:			
Bigcinder (95 percent)	Cinder North 12-16 PIFL2/PUTR2	Rangeland	R010AY043ID
3A:			
Bigcinder (90 percent)	Cinder 12-16 PIFL2/ARTRV	Rangeland	R010AY044ID
4:			
Blackspar (50 percent)	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	Rangeland	R010AY007ID
5:			
Bringmee (50 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
Hutton (30 percent)	WET MEADOW CAREX-JUNCUS	Rangeland	R010AY039ID
6:			
Carey Lake (90 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
7:			
Northcrater (45 percent)	Cinder Garden 12-16 EROVD-LERE7	Rangeland	R010AY046ID
8:			
Cox (35 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY003ID
Rehfield (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
9:			
Deerhorn (40 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Rehfield (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
10:			
Deerhorn (45 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Wildors (30 percent)	STONY LOAM 10-12 ARTRT/PSSPS	Rangeland	R011AY011ID
11:			
Deerhorn (40 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Wildors (30 percent)	STONY LOAM 10-12 ARTRT/PSSPS	Rangeland	R011AY011ID
Rekima (20 percent)	SHALLOW LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011XY004ID
12:			
Deuce (45 percent)	SHALLOW STONY 8-12 ARTRW8/PSSPS	Rangeland	R011BY009ID
Nargon (20 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
13:			
Drage, cool (80 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
14:			
Drage, cool (85 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
15:			
Echocrater (85 percent)	SANDY LOAM 16-22 ARTRV/PSSPS	Rangeland	R013XY006ID
16:			
Farmell (55 percent)	PLAYA 8-12 ARTR4/PSSPS	Rangeland	R011BY008ID
Power (20 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
17:			
Goodalfs (55 percent)	Loamy Bottom 12-16 LECI4	Rangeland	R010AY042ID
Craters (40 percent)	Cindery North 12-16 ARTRV-PUTR2/FEID-PSSPS	Rangeland	R010AY047ID
18:			
Goodington (45 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
Manard (40 percent)	CLAYEY 12-16 ARARL/FEID	Rangeland	R010AY001ID
19:			
Hal (60 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Moonville (25 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
20:			
Howcan (35 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R012XY012ID
Zeebar (25 percent)	LOAMY 16-22 ARTRV/FEID	Rangeland	R012XY021ID
Hutchley (20 percent)	CLAYEY SOUTH SLOPE 12-16 ARAR8/PSSPS	Rangeland	R012XY029ID
21:			
Huddle (65 percent)	LOAMY 12-16 ARTRT/LECI4	Rangeland	R011BY007ID
Moonville (20 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
22:			
Hutton (90 percent)	WET MEADOW CAREX-JUNCUS	Rangeland	R010AY039ID
23:			
Infernocone (85 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
24:			
Infernocone (90 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
25:			
Justesen (90 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
26:			
Justesen (90 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
27:			
Justesen (45 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
Drage (40 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
29:			
Cinderhurst (20 percent)	MIXED SHRUB 12-16 ARTRV/PONE3	Rangeland	R010AY020ID
30:			
Cinderhurst, extremely shallow (20 percent)	MIXED SHRUB 12-16 ARTRV/PONE3	Rangeland	R010AY020ID
31:			
Lavacreek (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Dollarhide (25 percent)	SHALLOW SUBALPINE 16+ ARART/FEID	Rangeland	R012XY025ID
32:			
Lavacreek (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Dollarhide (20 percent)	SHALLOW SUBALPINE 16+ ARART/FEID	Rangeland	R012XY025ID
33:			
Lavacreek, cold (65 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Dollarhide, cold (25 percent)	SHALLOW SUBALPINE 16+ ARART/FEID	Rangeland	R012XY025ID
34:			
Lavacreek (45 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Dollarhide (20 percent)	SHALLOW SUBALPINE 16+ ARART/FEID	Rangeland	R012XY025ID
Grassycone (20 percent)	QUAKING ASPEN 20+ POTR5	Rangeland	R010AY016ID
35:			
Lavacreek (45 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Vitale (35 percent)	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	Rangeland	R010AY009ID
36:			
McBiggam (90 percent)	LOAMY 12-16 ARTRV/FEID-PSSPS	Rangeland	R010AY004ID
37:			
McCarey (45 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Beartrap (35 percent)	LOAMY BOTTOM 8-14 ARTRT/LECI4	Rangeland	R011XY015ID
38:			
McCarey (55 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Beartrap (20 percent)	LOAMY BOTTOM 8-14 ARTRT/LECI4	Rangeland	R011XY015ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
39:			
McCarey (40 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Beartrap (30 percent)	LOAMY BOTTOM 8-14 ARTRT/LECI4	Rangeland	R011XY015ID
40:			
McCarey (50 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Justesen (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
41:			
McCarey (45 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Molyneux (30 percent)	LOAMY 12-16 ARTR4/FEID	Rangeland	R010AY023ID
42:			
McCarey (40 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Molyneux (25 percent)	LOAMY 12-16 ARTR4/FEID	Rangeland	R010AY023ID
43:			
McCarey (50 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Pedleford (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
44:			
McCarey (55 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Pedleford (30 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
45:			
McCarey (55 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
46:			
McCarey (60 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Splittop (20 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
47:			
McPan (50 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Rangeland	R011XY001ID
Chijer (30 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Rangeland	R011XY001ID
48:			
Molyneux (90 percent)	LOAMY 12-16 ARTR4/FEID	Rangeland	R010AY023ID
49:			
Nargon (35 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Atom (30 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Techicknot (25 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
50:			
Nargon (50 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Deuce (25 percent)	SHALLOW STONY 8-12 ARTRW8/PSSPS	Rangeland	R011BY009ID
51:			
Neeley (60 percent)	LOAMY 12-16 ARTRV/PSSPS-FEID	Rangeland	R013XY001ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
51:			
Hodad (30 percent)	LOAMY 12-16 ARTRV/PSSPS-FEID	Rangeland	R013XY001ID
52:			
Pagari (45 percent)	SANDY LOAM 12-16 ARTRT/PSSPS	Rangeland	R010AY022ID
Rehfield (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
53:			
Paulville (35 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
McPan (25 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Rangeland	R011XY001ID
Starbuck (20 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY003ID
55:			
Portino (90 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
56:			
Portino (90 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
57:			
Portino, stony surface (90 percent)	STONY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R011BY003ID
58:			
Portino, stony surface (90 percent)	STONY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R011BY003ID
59:			
Portino, stony surface (40 percent)	STONY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R011BY003ID
Trevino, stony surface (25 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS	Rangeland	R011BY013ID
60:			
Portneuf, bedrock substratum (90 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
61:			
Portneuf, bedrock substratum (90 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
62:			
Portneuf, bedrock substratum (90 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
63:			
Portneuf (60 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Quincy (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
64:			
Povey (55 percent)	NORTH SLOPE LOAMY 16-22 ARTRV/FEID	Rangeland	R010AY008ID
Dollarhide (25 percent)	SHALLOW SUBALPINE 16+ ARART/FEID	Rangeland	R012XY025ID
65:			
Quincy (50 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
65:			
Walco (35 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
66:			
Rehfield (75 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
67:			
Tenno, very stony surface (25 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS	Rangeland	R011BY013ID
68:			
Tenno, very stony surface (25 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS	Rangeland	R011BY013ID
69:			
Trevino, stony surface (25 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS	Rangeland	R011BY013ID
Portino, stony surface (15 percent)	STONY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R011BY003ID
70:			
Roundknoll (80 percent)	SANDY LOAM 16-22 ARTRV/PSSPS	Rangeland	R013XY006ID
71:			
Soen (80 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R012XY032ID
72:			
Splittop (50 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Atomic (30 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
73:			
Starbuck (50 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY003ID
74:			
Starbuck (40 percent)	SHALLOW LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY003ID
McPan (30 percent)	LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Rangeland	R011XY001ID
75:			
Sunsetcone (85 percent)	MOUNTAIN LOAMY 22+ PSMEG/SYOR2	Rangeland	R013XY017ID
76:			
Sunsetcone (50 percent)	MOUNTAIN LOAMY 22+ PSMEG/SYOR2	Rangeland	R013XY017ID
Grassycone (40 percent)	QUAKING ASPEN 20+ POTR5	Rangeland	R010AY016ID
77:			
Taunton (50 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Paulville (30 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
78:			
Techick (40 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Soelberg (35 percent)	GRAVELLY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R012XY004ID
Lesbut (15 percent)	GRAVELLY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R012XY004ID

Table 9.--Ecological Site—Soil Correlation--Continued

Map unit symbol and soil name (percentage of map unit)	Ecological site name	Ecological site type	Ecological site number
79:			
Techicknot (45 percent)	LOAMY 12-16 ARTRW8/PSSPS	Rangeland	R011BY010ID
Atom (25 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
Nargon (20 percent)	LOAMY 8-12 ARTRW8/PSSPS	Rangeland	R011BY001ID
80:			
Treemold (45 percent)	Very Shallow Loam 12-16 ARAR8/POSE	Rangeland	R010AY050ID
Silentcone (35 percent)	SANDY LOAM 16-22 ARTRV/PSSPS	Rangeland	R013XY006ID
81:			
Trevino, stony surface (40 percent)	SHALLOW LOAMY 8-12 ARAR8/PSSPS	Rangeland	R011BY013ID
Portino, stony surface (30 percent)	STONY LOAM 8-12 ARTRW8/PSSPS	Rangeland	R011BY003ID
82:			
Vining (35 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Kecko (30 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
83:			
Vining (40 percent)	LOAMY 8-12 ARTRT/PSSPS	Rangeland	R011AY009ID
Wapi (20 percent)	SANDY 8-14 ARTRT/HECOC8-ACHY	Rangeland	R011AY014ID
84:			
Vitale (45 percent)	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	Rangeland	R010AY009ID
Blackspar (35 percent)	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	Rangeland	R010AY007ID

Table 10.--Planting and Harvesting

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Well suited		Well suited		Moderately suited Low strength	 0.50
2:							
Bancroft	90	Well suited		Moderately suited Slope	 0.50	Moderately suited Low strength	 0.50
3:							
Bigcinder	95	Poorly suited Rock fragments Slope	 0.75 0.50	Unsuited Rock fragments Slope	 1.00 1.00	Moderately suited Slope	 0.50
3A:							
Bigcinder	90	Poorly suited Rock fragments	 0.75	Unsuited Rock fragments Slope	 1.00 0.50	Well suited	
4:							
Blackspar	50	Moderately suited Slope Rock fragments	 0.50 0.50	Unsuited Slope Rock fragments	 1.00 1.00	Poorly suited Slope	 1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
5:							
Bringmee	50	Well suited		Well suited		Moderately suited Low strength	 0.50
Hutton	30	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Low strength	 0.50
6:							
Carey Lake	90	Well suited		Well suited		Moderately suited Low strength	 0.50
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Moderately suited Sandiness Rock fragments	 0.50 0.50	Unsuited Rock fragments Slope Sandiness	 1.00 0.75 0.50	Moderately suited Slope Sandiness	 0.50 0.50
8:							
Cox	35	Moderately suited Rock fragments	 0.50	Unsuited Rock fragments Slope	 1.00 0.50	Well suited	
Rehfield	30	Well suited		Well suited		Well suited	
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Deerhorn	40	Well suited		Moderately suited Slope	 0.50	Well suited	
Rehfield	30	Well suited		Well suited		Well suited	
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Well suited		Moderately suited Slope	 0.50	Well suited	
Wildors	30	Moderately suited Rock fragments	 0.50	Poorly suited Rock fragments Slope	 0.75 0.50	Well suited	
11:							
Deerhorn	40	Well suited		Moderately suited Slope	 0.50	Well suited	
Wildors	30	Moderately suited Rock fragments	 0.50	Unsuited Rock fragments Slope	 1.00 0.50	Well suited	
Rekima	20	Moderately suited Rock fragments	 0.50	Poorly suited Rock fragments Slope	 0.75 0.50	Well suited	
12:							
Deuce	45	Well suited		Moderately suited Rock fragments Slope	 0.50 0.50	Moderately suited Low strength	 0.50
Nargon	20	Moderately suited Stickiness; high plasticity index	 0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	 0.50 0.50 0.50	Moderately suited Low strength	 0.50
Lava flows	15	Not rated		Not rated		Not rated	
13:							
Drage, cool	80	Well suited		Moderately suited Rock fragments Slope	 0.50 0.50	Well suited	
14:							
Drage, cool	85	Moderately suited Rock fragments	 0.50	Poorly suited Rock fragments	 0.75	Well suited	
15:							
Echocrater	85	Moderately suited Rock fragments	 0.50	Unsuited Slope Rock fragments	 1.00 0.75	Moderately suited Slope	 0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Farmell	55	Poorly suited Stickiness; high plasticity index	 0.75	Poorly suited Stickiness; high plasticity index	 0.75	Moderately suited Low strength	 0.50
Power	20	Well suited		Well suited		Moderately suited Low strength	 0.50
Playas	15	Not rated		Not rated		Not rated	
17:							
Goodalfs	55	Well suited		Well suited		Moderately suited Low strength	 0.50
Craters	40	Moderately suited Rock fragments	 0.50	Poorly suited Rock fragments	 0.75	Well suited	
18:							
Goodington	45	Poorly suited Stickiness; high plasticity index	 0.75	Poorly suited Stickiness; high plasticity index	 0.75	Moderately suited Low strength	 0.50
Manard	40	Poorly suited Stickiness; high plasticity index	 0.75	Poorly suited Stickiness; high plasticity index Rock fragments Slope	 0.75 0.50 0.50	Moderately suited Low strength	 0.50
19:							
Hal	60	Moderately suited Slope	 0.50	Unsuited Slope Rock fragments	 1.00 0.50	Poorly suited Slope	 1.00
Moonville	25	Well suited		Poorly suited Slope	 0.75	Moderately suited Low strength Slope	 0.50 0.50
20:							
Howcan	35	Moderately suited Slope Rock fragments	 0.50 0.50	Unsuited Slope Rock fragments	 1.00 1.00	Poorly suited Slope Low strength	 1.00 0.50
Zeebar	25	Well suited		Unsuited Slope Rock fragments	 1.00 0.50	Moderately suited Slope	 0.50
Hutchley	20	Unsuited Restrictive layer Stickiness; high plasticity index Rock fragments	 1.00 0.50 0.50	Unsuited Restrictive layer Slope Rock fragments Stickiness; high plasticity index	 1.00 0.75 0.50 0.50	Moderately suited Slope	 0.50
21:							
Huddle	65	Well suited		Moderately suited Rock fragments Slope	 0.50 0.50	Moderately suited Low strength	 0.50
Moonville	20	Well suited		Moderately suited Slope	 0.50	Moderately suited Low strength	 0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22:							
Hutton	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
23:							
Infernocone	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Well suited	
24:							
Infernocone	90	Well suited		Unsuited Slope Rock fragments	1.00 0.50	Moderately suited Slope	0.50
25:							
Justesen	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
26:							
Justesen	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
27:							
Justesen	45	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Drage	40	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Rock fragments Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
28:							
Lava flows	100	Not rated		Not rated		Not rated	
29:							
Lava flows	75	Not rated		Not rated		Not rated	
Cinderhurst	20	Unsuited Restrictive layer Rock fragments	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Well suited	
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Unsuited Restrictive layer Rock fragments	1.00 0.50	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Well suited	

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Lavacreek	65	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Dollarhide	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
32:							
Lavacreek	65	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Dollarhide	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
33:							
Lavacreek, cold	65	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Dollarhide, cold	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
34:							
Lavacreek	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Dollarhide	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Grassycone	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
35:							
Lavacreek	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Vitale	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
36:							
McBiggam	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37:							
McCarey	45	Well suited		Well suited		Moderately suited Low strength	0.50
Beartrap	35	Well suited		Well suited		Moderately suited Low strength	0.50
38:							
McCarey	55	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Beartrap	20	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
39:							
McCarey	40	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Beartrap	30	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Justesen	30	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
41:							
McCarey	45	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Molyneux	30	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
42:							
McCarey	40	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Molyneux	25	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength	0.50
Pedleford	30	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Moderately suited Low strength	0.50
44:							
McCarey	55	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44:							
Pedleford	30	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Moderately suited Low strength	0.50
45:							
McCarey	55	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Splittop	20	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
Lava flows	15	Not rated		Not rated		Not rated	
47:							
McPan	50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index Rock fragments	0.50 0.50	Moderately suited Low strength	0.50
Chijer	30	Well suited		Well suited		Moderately suited Low strength	0.50
48:							
Molyneux	90	Well suited		Well suited		Moderately suited Low strength	0.50
49:							
Nargon	35	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
Atom	30	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
Techicknot	25	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
50:							
Nargon	50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Rock fragments Stickiness; high plasticity index	0.50 0.50 0.50	Moderately suited Low strength	0.50
Deuce	25	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Well suited		Well suited		Moderately suited Low strength	0.50
Hodad	30	Well suited		Well suited		Moderately suited Low strength	0.50
52:							
Pagari	45	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Well suited	
Rehfield	30	Well suited		Moderately suited Slope	0.50	Well suited	
53:							
Paulville	35	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Low strength	0.50
McPan	25	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Moderately suited Low strength	0.50
Starbuck	20	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
54:							
Playas	100	Not rated		Not rated		Not rated	
55:							
Portino	90	Well suited		Well suited		Moderately suited Low strength	0.50
56:							
Portino	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
57:							
Portino, stony surface	90	Well suited		Moderately suited Rock fragments	0.50	Moderately suited Low strength	0.50
58:							
Portino, stony surface	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
59:							
Portino, stony surface	40	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Trevino, stony surface	25	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderately suited Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
60:							
Portneuf, bedrock substratum	90	Well suited		Well suited		Moderately suited Low strength	0.50
61:							
Portneuf, bedrock substratum	90	Well suited		Well suited		Moderately suited Low strength	0.50
62:							
Portneuf, bedrock substratum	90	Well suited		Moderately suited Slope	0.50	Moderately suited Low strength	0.50
63:							
Portneuf	60	Well suited		Well suited		Well suited	
Quincy	30	Moderately suited Sandiness	0.50	Moderately suited Slope Sandiness	0.50 0.50	Moderately suited Sandiness	0.50
64:							
Povey	55	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Poorly suited Slope	1.00
Dollarhide	25	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Poorly suited Slope	1.00
65:							
Quincy	50	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50	Moderately suited Sandiness	0.50
Walco	35	Moderately suited Sandiness	0.50	Moderately suited Sandiness Slope	0.50 0.50	Moderately suited Sandiness	0.50
66:							
Rehfield	75	Well suited		Well suited		Well suited	
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderately suited Low strength	0.50

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Trevino, stony surface	25	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Portino, stony surface	15	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
70:							
Roundknoll	80	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
				Slope	0.50		
71:							
Soen	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
72:							
Splittop	50	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Atomic	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
73:							
Starbuck	50	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Low strength	0.50
				Slope	0.50		
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
McPan	30	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75:							
Sunsetcone	85	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Low strength	0.50
76:							
Sunsetcone	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Low strength	0.50
Grassycone	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
77:							
Taunton	50	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Paulville	30	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
78:							
Techick	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Soelberg	35	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Lesbut	15	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
79:							
Techicknot	45	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Atom	25	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Nargon	20	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
80:							
Treemold	45	Unsuited		Unsuited		Well suited	
		Restrictive layer	1.00	Restrictive layer	1.00		
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Silentcone	35	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		

Table 10.--Planting and Harvesting--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80:							
Lava flows	20	Not rated		Not rated		Not rated	
81:							
Trevino, stony surface	40	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Portino, stony surface	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Kecko	30	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
83:							
Vining	40	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Wapi	20	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Blackspar	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
85:							
Water	100	Not rated		Not rated		Not rated	

Table 11.--Hazard of Erosion and Suitability for Roads

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
2:							
Bancroft	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
3:							
Bigcinder	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Landslides	0.20
3A:							
Bigcinder	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Landslides	0.05
4:							
Blackspar	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
5:							
Bringmee	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Hutton	30	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50
6:							
Carey Lake	90	Slight		Slight		Moderately suited	
						Low strength	0.50
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Landslides	0.16
8:							
Cox	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Rehfield	30	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Deerhorn	40	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Rehfield	30	Slight		Moderate Slope/erodibility	0.50	Well suited	
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Slight		Moderate Slope/erodibility	0.50	Well suited	
Wildors	30	Slight		Slight		Well suited	
11:							
Deerhorn	40	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Wildors	30	Slight		Slight		Moderately suited Slope	0.50
Rekima	20	Slight		Slight		Moderately suited Slope	0.50
12:							
Deuce	45	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Nargon	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Lava flows	15	Not rated		Not rated		Not rated	
13:							
Drage, cool	80	Slight		Slight		Moderately suited Slope	0.50
14:							
Drage, cool	85	Slight		Slight		Well suited	
15:							
Echocrater	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Landslides	1.00 0.20
16:							
Farmell	55	Slight		Slight		Moderately suited Low strength	0.50
Power	20	Slight		Slight		Moderately suited Low strength	0.50
Playas	15	Not rated		Not rated		Not rated	

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17:							
Goodalfs	55	Slight		Slight		Moderately suited Low strength	 0.50
Craters	40	Slight		Slight		Well suited	
18:							
Goodington	45	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
Manard	40	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
19:							
Hal	60	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Moonville	25	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
20:							
Howcan	35	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Zeebar	25	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Hutchley	20	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
21:							
Huddle	65	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength Slope	 0.50 0.50
Moonville	20	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength Slope	 0.50 0.50
22:							
Hutton	90	Slight		Slight		Poorly suited Flooding Low strength Wetness	 1.00 0.50 0.50
23:							
Infernocone	85	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Slope Landslides	 0.50 0.05
24:							
Infernocone	90	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Landslides	 1.00 0.20

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Justesen	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
26:							
Justesen	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
27:							
Justesen	45	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Drage	40	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Slope	1.00
						Low strength	0.50
28:							
Lava flows	100	Not rated		Not rated		Not rated	
29:							
Lava flows	75	Not rated		Not rated		Not rated	
Cinderhurst	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
31:							
Lavacreek	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Dollarhide	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
32:							
Lavacreek	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Dollarhide	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
33:							
Lavacreek, cold	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Dollarhide, cold	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Lavacreek	45	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Dollarhide	20	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Grassycone	20	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
35:							
Lavacreek	45	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Vitale	35	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
36:							
McBiggam	90	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
37:							
McCarey	45	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
Beartrap	35	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
38:							
McCarey	55	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
Beartrap	20	Moderate Slope/erodibility	 0.50	Severe Slope/erodibility	 0.95	Poorly suited Slope Low strength	 1.00 0.50
39:							
McCarey	40	Slight		Severe Slope/erodibility	 0.95	Moderately suited Slope Low strength	 0.50 0.50
Beartrap	30	Slight		Severe Slope/erodibility	 0.95	Moderately suited Slope Low strength	 0.50 0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
Justesen	30	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50
41:							
McCarey	45	Slight		Moderate Slope/erodibility	 0.50	Moderately suited Low strength	 0.50

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
Molyneux	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
42:							
McCarey	40	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Molyneux	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Pedleford	30	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
44:							
McCarey	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Pedleford	30	Slight		Moderate Slope/erodibility	0.50	Poorly suited Slope Low strength	1.00 0.50
45:							
McCarey	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Splittop	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Lava flows	15	Not rated		Not rated		Not rated	
47:							
McPan	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Chijer	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Molyneux	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
49:							
Nargon	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Atom	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Techicknot	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
50:							
Nargon	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Deuce	25	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Hodad	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
52:							
Pagari	45	Slight		Slight		Moderately suited Slope	0.50
Rehfield	30	Slight		Moderate Slope/erodibility	0.50	Well suited	
53:							
Paulville	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
McPan	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Starbuck	20	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
54:							
Playas	100	Not rated		Not rated		Not rated	
55:							
Portino	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56:							
Portino	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
57:							
Portino, stony surface	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	 0.50
58:							
Portino, stony surface	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
59:							
Portino, stony surface	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
Trevino, stony surface	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
60:							
Portneuf, bedrock substratum	90	Slight		Slight		Moderately suited Low strength	 0.50
61:							
Portneuf, bedrock substratum	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	 0.50
62:							
Portneuf, bedrock substratum	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
63:							
Portneuf	60	Slight		Moderate Slope/erodibility	0.50	Well suited	
Quincy	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Sandiness	 0.50 0.50
64:							
Povey	55	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00
Dollarhide	25	Severe Slope/erodibility	 0.75	Severe Slope/erodibility	 0.95	Poorly suited Slope	 1.00

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
65:							
Quincy	50	Slight		Slight		Moderately suited	
						Sandiness	0.50
Walco	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Sandiness	0.50
						Slope	0.50
66:							
Rehfield	75	Slight		Slight		Well suited	
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Trevino, stony surface	25	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
Portino, stony surface	15	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
70:							
Roundknoll	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Landslides	0.06
71:							
Soen	80	Slight		Slight		Moderately suited	
						Low strength	0.50
72:							
Splittop	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Atomic	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73:							
Starbuck	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	 0.50 0.50
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	 0.50 0.50
McPan	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
75:							
Sunsetcone	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	 1.00 0.50 0.20
76:							
Sunsetcone	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Landslides	 1.00 0.50 0.20
Grassycone	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	 1.00
77:							
Taunton	50	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	 0.50 0.50
Paulville	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	 0.50
78:							
Techick	40	Slight		Slight		Moderately suited Low strength	 0.50
Soelberg	35	Slight		Slight		Moderately suited Low strength	 0.50
Lesbut	15	Slight		Slight		Well suited	
79:							
Techicknot	45	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50
Atom	25	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	 0.50 0.50

Table 11.--Hazard of Erosion and Suitability for Roads--Continued

Map symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79:							
Nargon	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
80:							
Treemold	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Landslides	0.03
Silentcone	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Landslides	0.03
Lava flows	20	Not rated		Not rated		Not rated	
81:							
Trevino, stony surface	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
Portino, stony surface	30	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Kecko	30	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
83:							
Vining	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Wapi	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Blackspar	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
85:							
Water	100	Not rated		Not rated		Not rated	

Table 12.--Site Preparation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Well suited		Well suited	
2:					
Bancroft	90	Well suited		Well suited	
3:					
Bigcinder	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Rock fragments	0.50
3A:					
Bigcinder	90	Well suited		Poorly suited	
				Rock fragments	0.50
4:					
Blackspar	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Well suited		Well suited	
Hutton	30	Well suited		Well suited	
6:					
Carey Lake	90	Well suited		Well suited	
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Rock fragments	0.50
8:					
Cox	35	Unsuited		Poorly suited	
		Restrictive layer	1.00	Rock fragments	0.50
		Rock fragments	0.50		
Rehfield	30	Well suited		Well suited	
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Poorly suited		Well suited	
		Restrictive layer	0.50		
Rehfield	30	Well suited		Well suited	
Rock outcrop	20	Not rated		Not rated	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
10:					
Deerhorn	45	Poorly suited Restrictive layer	0.50	Well suited	
Wildors	30	Poorly suited Restrictive layer Rock fragments	0.50 0.50	Poorly suited Rock fragments	0.50
11:					
Deerhorn	40	Poorly suited Restrictive layer	0.50	Well suited	
Wildors	30	Poorly suited Restrictive layer Rock fragments	0.50 0.50	Poorly suited Rock fragments	0.50
Rekima	20	Unsuited Restrictive layer	1.00	Poorly suited Rock fragments	0.50
12:					
Deuce	45	Unsuited Restrictive layer	1.00	Well suited	
Nargon	20	Poorly suited Restrictive layer	0.50	Well suited	
Lava flows	15	Not rated		Not rated	
13:					
Drage, cool	80	Well suited		Well suited	
14:					
Drage, cool	85	Well suited		Poorly suited Rock fragments	0.50
15:					
Echocrater	85	Poorly suited Slope	0.50	Poorly suited Slope Rock fragments	0.50 0.50
16:					
Farmell	55	Well suited		Poorly suited Stickiness; high plasticity index	0.50
Power	20	Well suited		Well suited	
Playas	15	Not rated		Not rated	
17:					
Goodalfs	55	Well suited		Well suited	
Craters	40	Well suited		Poorly suited Rock fragments	0.50
18:					
Goodington	45	Well suited		Poorly suited Stickiness; high plasticity index	0.50

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
18:					
Manard	40	Poorly suited		Poorly suited	
		Restrictive layer	0.50	Stickiness; high plasticity index	0.50
19:					
Hal	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Moonville	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
20:					
Howcan	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Rock fragments	0.50
Zeebar	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Hutchley	20	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Slope	0.50	Slope	0.50
				Rock fragments	0.50
21:					
Huddle	65	Well suited		Well suited	
Moonville	20	Well suited		Well suited	
22:					
Hutton	90	Well suited		Well suited	
23:					
Infernocone	85	Well suited		Well suited	
24:					
Infernocone	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
25:					
Justesen	90	Well suited		Well suited	
26:					
Justesen	90	Well suited		Well suited	
27:					
Justesen	45	Well suited		Well suited	
Drage	40	Well suited		Well suited	
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	
Cinderhurst	20	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30:					
Lava flows	70	Not rated		Not rated	
Cinderhurst, extremely shallow	20	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
31:					
Lavacreek	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dollarhide	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
32:					
Lavacreek	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dollarhide	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
33:					
Lavacreek, cold	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dollarhide, cold	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
34:					
Lavacreek	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dollarhide	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
Grassycone	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
35:					
Lavacreek	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Vitale	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
		Restrictive layer	0.50		
36:					
McBiggam	90	Well suited		Well suited	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37:					
McCarey	45	Poorly suited Restrictive layer	 0.50	Well suited	
Beartrap	35	Well suited		Well suited	
38:					
McCarey	55	Poorly suited Restrictive layer	 0.50	Well suited	
Beartrap	20	Well suited		Well suited	
39:					
McCarey	40	Poorly suited Restrictive layer	 0.50	Well suited	
Beartrap	30	Well suited		Well suited	
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Well suited		Well suited	
Justesen	30	Well suited		Well suited	
41:					
McCarey	45	Well suited		Well suited	
Molyneux	30	Well suited		Well suited	
42:					
McCarey	40	Poorly suited Restrictive layer	 0.50	Well suited	
Molyneux	25	Well suited		Well suited	
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Poorly suited Slope	 0.50	Poorly suited Slope	 0.50
Pedleford	30	Poorly suited Slope Rock fragments Restrictive layer	 0.50 0.50 0.50	Poorly suited Rock fragments Slope	 0.50 0.50
44:					
McCarey	55	Poorly suited Restrictive layer	 0.50	Well suited	
Pedleford	30	Poorly suited Restrictive layer	 0.50	Poorly suited Rock fragments	 0.50
45:					
McCarey	55	Poorly suited Restrictive layer	 0.50	Well suited	
Rock outcrop	25	Not rated		Not rated	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
46:					
McCarey	60	Poorly suited Restrictive layer	0.50	Well suited	
Splittop	20	Poorly suited Restrictive layer	0.50	Well suited	
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Poorly suited Restrictive layer	0.50	Well suited	
Chijer	30	Well suited		Well suited	
48:					
Molyneux	90	Well suited		Well suited	
49:					
Nargon	35	Poorly suited Restrictive layer	0.50	Well suited	
Atom	30	Well suited		Well suited	
Techicknot	25	Well suited		Well suited	
50:					
Nargon	50	Poorly suited Restrictive layer	0.50	Well suited	
Deuce	25	Unsuited Restrictive layer	1.00	Well suited	
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Well suited		Well suited	
Hodad	30	Well suited		Well suited	
52:					
Pagari	45	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Rehfield	30	Well suited		Well suited	
53:					
Paulville	35	Well suited		Well suited	
McPan	25	Poorly suited Restrictive layer	0.50	Well suited	
Starbuck	20	Unsuited Restrictive layer	1.00	Well suited	
54:					
Playas	100	Not rated		Not rated	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
55:					
Portino	90	Poorly suited		Well suited	
		Restrictive layer	0.50		
56:					
Portino	90	Poorly suited		Well suited	
		Restrictive layer	0.50		
57:					
Portino, stony surface	90	Poorly suited		Well suited	
		Restrictive layer	0.50		
58:					
Portino, stony surface	90	Poorly suited		Well suited	
		Restrictive layer	0.50		
59:					
Portino, stony surface	40	Poorly suited		Well suited	
		Restrictive layer	0.50		
Trevino, stony surface	25	Unsuited		Well suited	
		Restrictive layer	1.00		
Rock outcrop	20	Not rated		Not rated	
60:					
Portneuf, bedrock substratum	90	Well suited		Well suited	
61:					
Portneuf, bedrock substratum	90	Well suited		Well suited	
62:					
Portneuf, bedrock substratum	90	Well suited		Well suited	
63:					
Portneuf	60	Well suited		Well suited	
Quincy	30	Well suited		Well suited	
64:					
Povey	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Dollarhide	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
65:					
Quincy	50	Well suited		Well suited	
Walco	35	Poorly suited		Well suited	
		Restrictive layer	0.50		

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
66:					
Rehfield	75	Well suited		Well suited	
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Unsuited		Well suited	
		Restrictive layer	1.00		
68:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00		
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Unsuited		Well suited	
		Restrictive layer	1.00		
Portino, stony surface	15	Poorly suited		Well suited	
		Restrictive layer	0.50		
70:					
Roundknoll	80	Well suited		Poorly suited	
				Rock fragments	0.50
71:					
Soen	80	Well suited		Well suited	
72:					
Splittop	50	Poorly suited		Well suited	
		Restrictive layer	0.50		
Atomic	30	Well suited		Well suited	
73:					
Starbuck	50	Unsuited		Poorly suited	
		Restrictive layer	1.00	Rock fragments	0.50
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	Unsuited		Well suited	
		Restrictive layer	1.00		
McPan	30	Poorly suited		Well suited	
		Restrictive layer	0.50		
Rock outcrop	20	Not rated		Not rated	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
75:					
Sunsetcone	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
76:					
Sunsetcone	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Grassycone	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
77:					
Taunton	50	Poorly suited		Well suited	
		Restrictive layer	0.50		
Paulville	30	Well suited		Well suited	
78:					
Techick	40	Well suited		Well suited	
Soelberg	35	Well suited		Well suited	
Lesbut	15	Well suited		Well suited	
79:					
Techicknot	45	Well suited		Well suited	
Atom	25	Well suited		Well suited	
Nargon	20	Poorly suited		Well suited	
		Restrictive layer	0.50		
80:					
Treemold	45	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
				Rock fragments	0.50
Silentcone	35	Poorly suited		Poorly suited	
		Restrictive layer	0.50	Rock fragments	0.50
Lava flows	20	Not rated		Not rated	
81:					
Trevino, stony surface	40	Unsuited		Well suited	
		Restrictive layer	1.00		
Portino, stony surface	30	Poorly suited		Well suited	
		Restrictive layer	0.50		
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Poorly suited		Well suited	
		Restrictive layer	0.50		
Kecko	30	Well suited		Well suited	

Table 12.--Site Preparation--Continued

Map symbol and soil name	Pct. of map unit	Mechanical site preparation (deep)		Mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
82:					
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Poorly suited		Well suited	
		Restrictive layer	0.50		
Wapi	20	Unsuited		Well suited	
		Restrictive layer	1.00		
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
		Restrictive layer	0.50		
Blackspar	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	0.50
85:					
Water	100	Not rated		Not rated	

Table 13.--Site Restoration

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Low Texture/rock fragments	0.10	Low	
2:					
Bancroft	90	Low Texture/rock fragments	0.10	Low	
3:					
Bigcinder	95	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Moderate Available water	0.50
3A:					
Bigcinder	90	Low Texture/surface depth/rock fragments	0.10	High Available water	1.00
4:					
Blackspar	50	High Texture/slope/ rock fragments	1.00	Moderate Available water	0.50
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Hutton	30	Low		Low	
6:					
Carey Lake	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
8:					
Cox	35	High Texture/surface depth/rock fragments	1.00	High Available water	1.00
Rehfield	30	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Rehfield	30	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Rock outcrop	20	Not rated		Not rated	
10:					
Deerhorn	45	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Wildors	30	High Texture/rock fragments	1.00	High Available water	1.00
11:					
Deerhorn	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Wildors	30	High Texture/rock fragments	1.00	High Available water	1.00
Rekima	20	High Texture/surface depth/rock fragments	1.00	High Available water	1.00
12:					
Deuce	45	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water Carbonate content	0.50 0.50
Nargon	20	Moderate Texture/rock fragments	0.50	Moderate Carbonate content Available water	0.50 0.50
Lava flows	15	Not rated		Not rated	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
13:					
Drage, cool	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
14:					
Drage, cool	85	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
15:					
Echocrater	85	High Texture/slope/ surface depth	1.00	High Available water	1.00
16:					
Farmell	55	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Power	20	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Playas	15	Not rated		Not rated	
17:					
Goodalfs	55	Moderate Texture/surface depth/rock fragments	0.50	Low	
Craters	40	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
18:					
Goodington	45	Low Texture/rock fragments	0.10	Low	
Manard	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
19:					
Hal	60	Moderate Texture/slope/ rock fragments	0.50	Low	
Moonville	25	Low Texture/rock fragments	0.10	Moderate Available water	0.50
20:					
Howcan	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	High Available water	1.00

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
20:					
Zeebar	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Hutchley	20	High Texture/surface depth/rock fragments	1.00	High Available water	1.00
21:					
Huddle	65	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
Moonville	20	Low Texture/rock fragments	0.10	Low	
22:					
Hutton	90	Low		Low	
23:					
Infernocone	85	Low Texture/rock fragments	0.10	High Available water	1.00
24:					
Infernocone	90	Low Texture/slope/ rock fragments	0.10	Moderate Available water	0.50
25:					
Justesen	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50
26:					
Justesen	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50
27:					
Justesen	45	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Drage	40	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29:					
Cinderhurst	20	High Texture/surface depth/rock fragments	1.00	High Available water	1.00
30:					
Lava flows	70	Not rated		Not rated	
Cinderhurst, extremely shallow	20	High Texture/surface depth/rock fragments	1.00	High Available water	1.00
31:					
Lavacreek	65	Low Texture/rock fragments	0.10	Low	
Dollarhide	25	Moderate Texture/slope/ rock fragments	0.50	Moderate Available water	0.50
32:					
Lavacreek	65	Low Texture/rock fragments	0.10	Low	
Dollarhide	20	Moderate Texture/slope/ rock fragments	0.50	Moderate Available water	0.50
33:					
Lavacreek, cold	65	Low Texture/rock fragments	0.10	Low	
Dollarhide, cold	25	Moderate Texture/slope/ rock fragments	0.50	Moderate Available water	0.50
34:					
Lavacreek	45	Low Texture/rock fragments	0.10	Low	
Dollarhide	20	Moderate Texture/slope/ rock fragments	0.50	Moderate Available water	0.50
Grassycone	20	Moderate Texture/slope/ surface depth/ fragments	0.50	Low	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35:					
Lavacreek	45	Low Texture/rock fragments	0.10	Low	
Vitale	35	High Texture/slope/ surface depth/ rock fragments	1.00	High Available water	1.00
36:					
McBiggam	90	High Texture/surface depth/rock fragments	1.00	Low	
37:					
McCarey	45	Low Texture/rock fragments	0.10	Low	
Beartrap	35	Low Texture/rock fragments	0.10	Moderate Available water	0.50
38:					
McCarey	55	Low Texture/rock fragments	0.10	Low	
Beartrap	20	Low Texture/rock fragments	0.10	Moderate Available water	0.50
39:					
McCarey	40	Low Texture/rock fragments	0.10	Low	
Beartrap	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Low Texture/rock fragments	0.10	Low	
Justesen	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50
41:					
McCarey	45	Low Texture/rock fragments	0.10	Low	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41:					
Molyneux	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50
42:					
McCarey	40	Low Texture/rock fragments	0.10	Low	
Molyneux	25	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Pedleford	30	High Texture/rock fragments	1.00	High Available water	1.00
44:					
McCarey	55	Low Texture/rock fragments	0.10	Low	
Pedleford	30	High Texture/rock fragments	1.00	High Available water	1.00
45:					
McCarey	55	Low Texture/rock fragments	0.10	Low	
Rock outcrop	25	Not rated		Not rated	
46:					
McCarey	60	Low Texture/rock fragments	0.10	Low	
Splittop	20	High Texture/surface depth/rock fragments	1.00	Moderate Carbonate content Available water	0.50 0.50
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
47:					
Chijer	30	Moderate		Moderate	
		Texture/rock fragments	0.50	Available water	0.50
				Carbonate content	0.50
48:					
Molyneux	90	Low		Moderate	
		Texture/rock fragments	0.10	Available water	0.50
49:					
Nargon	35	Moderate		Moderate	
		Texture/rock fragments	0.50	Carbonate content	0.50
				Available water	0.50
Atom	30	High		High	
		Texture/surface depth/rock fragments	1.00	Salinity	1.00
				Carbonate content	0.50
				Soil reaction	0.50
				Available water	0.50
Techicknot	25	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Available water	0.50
50:					
Nargon	50	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Carbonate content	0.50
				Available water	0.50
Deuce	25	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Available water	0.50
				Carbonate content	0.50
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Low		Moderate	
		Texture/rock fragments	0.10	Soil reaction	0.50
Hodad	30	Low		Moderate	
		Texture/rock fragments	0.10	Soil reaction	0.50
52:					
Pagari	45	High		High	
		Texture/rock fragments	1.00	Available water	1.00
Rehfield	30	High		Moderate	
		Texture/rock fragments	1.00	Available water	0.50

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
Paulville	35	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
McPan	25	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Starbuck	20	High Texture/surface depth/rock fragments	1.00	Moderate Available water	0.50
54:					
Playas	100	Not rated		Not rated	
55:					
Portino	90	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
56:					
Portino	90	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
57:					
Portino, stony surface	90	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
58:					
Portino, stony surface	90	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
59:					
Portino, stony surface	40	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
Trevino, stony surface	25	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Rock outcrop	20	Not rated		Not rated	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
60:					
Portneuf, bedrock substratum	90	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
61:					
Portneuf, bedrock substratum	90	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
62:					
Portneuf, bedrock substratum	90	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
63:					
Portneuf	60	Moderate Texture/rock fragments	0.50	Moderate Carbonate content Available water Salinity	0.50 0.50 0.50
Quincy	30	High Texture/rock fragments	1.00	Moderate Available water	0.50
64:					
Povey	55	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Dollarhide	25	Moderate Texture/slope/ rock fragments	0.50	Moderate Available water	0.50
65:					
Quincy	50	High Texture/rock fragments	1.00	High Available water	1.00
Walco	35	High Texture/rock fragments	1.00	High Available water	1.00
66:					
Rehfield	75	High Texture/rock fragments	1.00	Moderate Available water	0.50
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Moderate Texture/rock fragments	0.50	High Available water	1.00

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
68:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Moderate		High	
		Texture/slope/ rock fragments	0.50	Available water	1.00
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Low		Moderate	
		Texture/rock fragments	0.10	Available water	0.50
Portino, stony surface	15	Moderate		Moderate	
		Texture/rock fragments	0.50	Soil reaction	0.50
				Carbonate content	0.50
				Available water	0.50
70:					
Roundknoll	80	High		High	
		Texture/surface depth/rock fragments	1.00	Available water	1.00
71:					
Soen	80	Low		Low	
72:					
Splittop	50	Moderate		Moderate	
		Texture/surface depth/rock fragments	0.50	Carbonate content	0.50
				Available water	0.50
Atomic	30	Moderate		Moderate	
		Texture/rock fragments	0.50	Available water	0.50
				Soil reaction	0.50
73:					
Starbuck	50	High		High	
		Texture/surface depth/rock fragments	1.00	Available water	1.00
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	High		High	
		Texture/surface depth/rock fragments	1.00	Available water	1.00
McPan	30	Moderate		Moderate	
		Texture/rock fragments	0.50	Available water	0.50
Rock outcrop	20	Not rated		Not rated	

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
75:					
Sunsetcone	85	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Moderate Available water	0.50
76:					
Sunsetcone	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Moderate Available water	0.50
Grassycone	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
77:					
Taunton	50	Moderate Texture/rock fragments	0.50	Moderate Available water Carbonate content	0.50 0.50
Paulville	30	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
78:					
Techick	40	Low Texture/surface depth/rock fragments	0.10	Low	
Soelberg	35	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Lesbut	15	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
79:					
Techicknot	45	High Texture/surface depth/rock fragments	1.00	Moderate Available water	0.50
Atom	25	High Texture/surface depth/rock fragments	1.00	High Salinity Carbonate content Available water Soil reaction	1.00 0.50 0.50 0.50
Nargon	20	Moderate Texture/rock fragments	0.50	Moderate Carbonate content Available water	0.50 0.50

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
80:					
Treemold	45	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
Silentcone	35	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
Lava flows	20	Not rated		Not rated	
81:					
Trevino, stony surface	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Portino, stony surface	30	Moderate Texture/rock fragments	0.50	Moderate Soil reaction Carbonate content Available water	0.50 0.50 0.50
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Moderate Texture/rock fragments	0.50	High Available water	1.00
Kecko	30	High Texture/rock fragments	1.00	High Available water	1.00
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Moderate Texture/rock fragments	0.50	High Available water	1.00
Wapi	20	High Texture/rock fragments	1.00	High Available water	1.00
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	High Texture/slope/ surface depth/ rock fragments	1.00	High Available water	1.00
Blackspar	35	High Texture/slope/ surface depth/ rock fragments	1.00	High Available water	1.00

Table 13.--Site Restoration--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
85:					
Water	100	Not rated		Not rated	

Table 14.--Camp and Picnic Areas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Not limited		Not limited	
2:					
Bancroft	90	Not limited		Not limited	
3:					
Bigcinder	95	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
3A:					
Bigcinder	90	Somewhat limited		Somewhat limited	
		Slope	0.16	Slope	0.16
4:					
Blackspar	50	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.16	Large stones content	0.16
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Not limited		Not limited	
Hutton	30	Very limited		Very limited	
		Flooding	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.81	Flooding	0.40
6:					
Carey Lake	90	Not limited		Not limited	
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Too steep	1.00	Too steep	1.00
		Too sandy	0.12	Too sandy	0.12
8:					
Cox	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.84	Large stones content	0.84
		Slope	0.04	Slope	0.04
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.08	Too sandy	0.08

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
8:					
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.99	Depth to cemented pan	0.99
		Slope	0.04	Slope	0.04
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.08	Too sandy	0.08
Rock outcrop	20	Not rated		Not rated	
10:					
Deerhorn	45	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.99	Depth to cemented pan	0.99
Wildors	30	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.97	Depth to cemented pan	0.97
		Large stones content	0.26	Large stones content	0.26
11:					
Deerhorn	40	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.99	Depth to cemented pan	0.99
		Slope	0.04	Slope	0.04
Wildors	30	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.99	Depth to cemented pan	0.99
		Large stones content	0.26	Large stones content	0.26
		Slope	0.04	Slope	0.04
Rekima	20	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.05	Large stones content	0.05
		Slope	0.04	Slope	0.04
12:					
Deuce	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
Nargon	20	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Lava flows	15	Not rated		Not rated	
13:					
Drage, cool	80	Somewhat limited		Somewhat limited	
		Gravel	0.38	Gravel	0.38
		Slope	0.04	Slope	0.04

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14:					
Drage, cool	85	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
15:					
Echocrater	85	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too sandy	0.50	Too sandy	0.50
		Gravel	0.08	Gravel	0.08
16:					
Farmell	55	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slow water movement	0.41	Slow water movement	0.41
Power	20	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Playas	15	Not rated		Not rated	
17:					
Goodalfs	55	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow water movement	0.05	Slow water movement	0.05
Craters	40	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
18:					
Goodington	45	Somewhat limited		Somewhat limited	
		Slow water movement	0.45	Slow water movement	0.45
Manard	40	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.80	Depth to cemented pan	0.80
		Slow water movement	0.45	Slow water movement	0.45
19:					
Hal	60	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	0.54	Gravel	0.54
		Dusty	0.50	Dusty	0.50
Moonville	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
20:					
Howcan	35	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
Zeebar	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Dusty	0.50	Dusty	0.50
		Gravel	0.02	Gravel	0.02

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
20:					
Hutchley	20	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel	0.21	Gravel	0.21
21:					
Huddle	65	Somewhat limited		Somewhat limited	
		Gravel	0.79	Gravel	0.79
Moonville	20	Not limited		Not limited	
22:					
Hutton	90	Very limited		Very limited	
		Flooding	1.00	Slow water movement	1.00
		Slow water movement	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.81	Flooding	0.40
23:					
Infernocone	85	Somewhat limited		Somewhat limited	
		Gravel	0.20	Gravel	0.20
		Slope	0.16	Slope	0.16
24:					
Infernocone	90	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	0.20	Gravel	0.20
25:					
Justesen	90	Not limited		Not limited	
26:					
Justesen	90	Not limited		Not limited	
27:					
Justesen	45	Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37
Drage	40	Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	
Cinderhurst	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.92	Large stones content	0.92
		Slope	0.04	Slope	0.04
30:					
Lava flows	70	Not rated		Not rated	

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30:					
Cinderhurst, extremely shallow--	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.92	Large stones content	0.92
		Slope	0.04	Slope	0.04
31:					
Lavacreek----------	65	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Dusty	0.50	Dusty	0.50
Dollarhide----------	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
32:					
Lavacreek----------	65	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Dusty	0.50	Dusty	0.50
Dollarhide----------	20	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
33:					
Lavacreek, cold-----	65	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Dusty	0.50	Dusty	0.50
Dollarhide, cold----	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
34:					
Lavacreek----------	45	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Dusty	0.50	Dusty	0.50
Dollarhide----------	20	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
Grassycone----------	20	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
35:					
Lavacreek----------	45	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Dusty	0.50	Dusty	0.50

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35:					
Vitale	35	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Slow water movement	0.39	Slow water movement	0.39
		Gravel	0.20	Gravel	0.20
		Large stones content	0.06	Large stones content	0.06
36:					
McBiggam	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.41	Slow water movement	0.41
37:					
McCarey	45	Not limited		Not limited	
Beartrap	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
38:					
McCarey	55	Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84
Beartrap	20	Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84
		Dusty	0.50	Dusty	0.50
39:					
McCarey	40	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Beartrap	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.04	Slope	0.04
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Not limited		Not limited	
Justesen	30	Not limited		Not limited	
41:					
McCarey	45	Not limited		Not limited	
Molyneux	30	Not limited		Not limited	
42:					
McCarey	40	Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04
Molyneux	25	Not limited		Not limited	
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
43:					
Pedleford	30	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Large stones content	0.61	Large stones content	0.61
44:					
McCarey	55	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
Pedleford	30	Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96
		Large stones content	0.61	Large stones content	0.61
45:					
McCarey	55	Not limited		Not limited	
Rock outcrop	25	Not rated		Not rated	
46:					
McCarey	60	Not limited		Not limited	
Splittop	20	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.71	Depth to cemented pan	0.71
		Dusty	0.50	Dusty	0.50
Chijer	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
48:					
Molyneux	90	Not limited		Not limited	
49:					
Nargon	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37
Atom	30	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37
		Slow water movement	0.21	Slow water movement	0.21
Techicknot	25	Not limited		Not limited	
50:					
Nargon	50	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
50:					
Deuce	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
Hodad	30	Not limited		Not limited	
52:					
Pagari	45	Somewhat limited		Somewhat limited	
		Large stones content	0.29	Large stones content	0.29
		Slope	0.04	Slope	0.04
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81
53:					
Paulville	35	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
McPan	25	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.71	Depth to cemented pan	0.71
		Dusty	0.50	Dusty	0.50
Starbuck	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
54:					
Playas	100	Not rated		Not rated	
55:					
Portino	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
56:					
Portino	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
57:					
Portino, stony surface	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
58:					
Portino, stony surface	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
59:					
Portino, stony surface	40	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Trevino, stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
Rock outcrop	20	Not rated		Not rated	
60:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
61:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
62:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
63:					
Portneuf	60	Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21
Quincy	30	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	0.63	Slope	0.63
64:					
Povey	55	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	0.26	Gravel	0.26
Dollarhide	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Gravel	1.00	Gravel	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
65:					
Quincy	50	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
Walco	35	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
		Slope	0.01	Slope	0.01
66:					
Rehfield	75	Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.76	Large stones content	0.76
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
68:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.76	Large stones content	0.76
		Dusty	0.50	Dusty	0.50
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
Portino, stony surface	15	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
70:					
Roundknoll	80	Somewhat limited		Somewhat limited	
		Too sandy	0.50	Too sandy	0.50
		Slope	0.37	Slope	0.37
71:					
Soen	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.41	Slow water movement	0.41
72:					
Splittop	50	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
Atomic	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
73:					
Starbuck	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37
		Large stones content	0.12	Large stones content	0.12

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
73:					
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.37	Slope	0.37
McPan	30	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.71	Depth to cemented pan	0.71
		Dusty	0.50	Dusty	0.50
Rock outcrop	20	Not rated		Not rated	
75:					
Sunsetcone	85	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
76:					
Sunsetcone	50	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
Grassycone	40	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
77:					
Taunton	50	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Depth to cemented pan	0.29	Depth to cemented pan	0.29
		Slope	0.04	Slope	0.04
Paulville	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
78:					
Techick	40	Not limited		Not limited	
Soelberg	35	Not limited		Not limited	
Lesbut	15	Somewhat limited		Somewhat limited	
		Gravel	0.46	Gravel	0.46
79:					
Techicknot	45	Not limited		Not limited	
Atom	25	Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50
		Slow water movement	0.21	Slow water movement	0.21
Nargon	20	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50

Table 14.--Camp and Picnic Areas--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
80:					
Treemold	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel	1.00	Gravel	1.00
		Slope	0.01	Slope	0.01
Silentcone	35	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	0.01	Slope	0.01
Lava flows	20	Not rated		Not rated	
81:					
Trevino, stony surface	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
Portino, stony surface	30	Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50
		Slope	0.16	Slope	0.16
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Not limited		Not limited	
Kecko	30	Somewhat limited		Somewhat limited	
		Too sandy	0.34	Too sandy	0.34
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Not limited		Not limited	
Wapi	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.37	Too sandy	0.37
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Slow water movement	0.39	Slow water movement	0.39
		Gravel	0.20	Gravel	0.20
		Large stones content	0.06	Large stones content	0.06
Blackspar	35	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.16	Large stones content	0.16
85:					
Water	100	Not rated		Not rated	

Table 15.--Trail Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Not limited		Not limited	
2:					
Bancroft	90	Not limited		Not limited	
3:					
Bigcinder	95	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.78
3A:					
Bigcinder	90	Not limited		Not limited	
4:					
Blackspar	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.16	Large stones	0.16
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Not limited		Not limited	
Hutton	30	Somewhat limited		Somewhat limited	
		Flooding	0.40	Flooding	0.40
		Depth to saturated zone	0.11	Depth to saturated zone	0.11
6:					
Carey Lake	90	Not limited		Not limited	
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Somewhat limited		Somewhat limited	
		Slope	0.68	Too sandy	0.12
		Too sandy	0.12		
8:					
Cox	35	Somewhat limited		Somewhat limited	
		Large stones	0.84	Large stones	0.84
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.08	Too sandy	0.08
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Not limited		Not limited	
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.08	Too sandy	0.08
Rock outcrop	20	Not rated		Not rated	

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
10:					
Deerhorn	45	Not limited		Not limited	
Wildors	30	Somewhat limited		Somewhat limited	
		Large stones	0.26	Large stones	0.26
11:					
Deerhorn	40	Not limited		Not limited	
Wildors	30	Somewhat limited		Somewhat limited	
		Large stones	0.26	Large stones	0.26
Rekima	20	Somewhat limited		Somewhat limited	
		Large stones	0.05	Large stones	0.05
12:					
Deuce	45	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Nargon	20	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Lava flows	15	Not rated		Not rated	
13:					
Drage, cool	80	Not limited		Not limited	
14:					
Drage, cool	85	Not limited		Not limited	
15:					
Echocrater	85	Very limited		Somewhat limited	
		Slope	1.00	Too sandy	0.50
		Too sandy	0.50	Slope	0.22
16:					
Farmell	55	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Power	20	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Playas	15	Not rated		Not rated	
17:					
Goodalfs	55	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
Craters	40	Not limited		Not limited	
18:					
Goodington	45	Not limited		Not limited	
Manard	40	Not limited		Not limited	

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19:					
Hal	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Dustiness	0.50	Dustiness	0.50
Moonville	25	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Slope	0.92		
20:					
Howcan	35	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.96
Zeebar	25	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.56
		Dustiness	0.50	Dustiness	0.50
Hutchley	20	Very limited		Not limited	
		Slope	1.00		
21:					
Huddle	65	Not limited		Not limited	
Moonville	20	Not limited		Not limited	
22:					
Hutton	90	Somewhat limited		Somewhat limited	
		Flooding	0.40	Flooding	0.40
		Depth to saturated zone	0.11	Depth to saturated zone	0.11
23:					
Infernocone	85	Not limited		Not limited	
24:					
Infernocone	90	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.22
25:					
Justesen	90	Not limited		Not limited	
26:					
Justesen	90	Not limited		Not limited	
27:					
Justesen	45	Not limited		Not limited	
Drage	40	Not limited		Not limited	
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	
Cinderhurst	20	Somewhat limited		Somewhat limited	
		Large stones	0.92	Large stones	0.92
30:					
Lava flows	70	Not rated		Not rated	

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30:					
Cinderhurst, extremely shallow	20	Somewhat limited		Somewhat limited	
		Large stones	0.92	Large stones	0.92
31:					
Lavacreek	65	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	1.00	Slope	0.96
		Dustiness	0.50	Dustiness	0.50
Dollarhide	25	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.96
32:					
Lavacreek	65	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	1.00	Slope	1.00
		Dustiness	0.50	Dustiness	0.50
Dollarhide	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
33:					
Lavacreek, cold	65	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	1.00	Slope	0.96
		Dustiness	0.50	Dustiness	0.50
Dollarhide, cold	25	Very limited		Somewhat limited	
		Slope	1.00	Slope	0.96
34:					
Lavacreek	45	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	1.00	Slope	1.00
		Dustiness	0.50	Dustiness	0.50
Dollarhide	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Grassycone	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
35:					
Lavacreek	45	Very limited		Very limited	
		Gravel	1.00	Gravel	1.00
		Slope	1.00	Slope	1.00
		Dustiness	0.50	Dustiness	0.50
Vitale	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.06	Large stones	0.06
36:					
McBiggam	90	Not limited		Not limited	

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37:					
McCarey	45	Not limited		Not limited	
Beartrap	35	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
38:					
McCarey	55	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
Beartrap	20	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
39:					
McCarey	40	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
Beartrap	30	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Not limited		Not limited	
Justesen	30	Not limited		Not limited	
41:					
McCarey	45	Not limited		Not limited	
Molyneux	30	Not limited		Not limited	
42:					
McCarey	40	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
Molyneux	25	Not limited		Not limited	
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Slope	0.02		
Pedleford	30	Somewhat limited		Somewhat limited	
		Large stones	0.61	Large stones	0.61
		Slope	0.02		
44:					
McCarey	55	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
Pedleford	30	Somewhat limited		Somewhat limited	
		Large stones	0.61	Large stones	0.61

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
45:					
McCarey	55	Not limited		Not limited	
Rock outcrop	25	Not rated		Not rated	
46:					
McCarey	60	Not limited		Not limited	
Splittop	20	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Chijer	30	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
48:					
Molyneux	90	Not limited		Not limited	
49:					
Nargon	35	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Atom	30	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Techicknot	25	Not limited		Not limited	
50:					
Nargon	50	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Deuce	25	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Not limited		Not limited	
Hodad	30	Not limited		Not limited	
52:					
Pagari	45	Somewhat limited		Somewhat limited	
		Large stones	0.29	Large stones	0.29
Rehfield	30	Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81
53:					
Paulville	35	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
McPan	25	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
Starbuck	20	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
54:					
Playas	100	Not rated		Not rated	
55:					
Portino	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
56:					
Portino	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
57:					
Portino, stony surface	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
58:					
Portino, stony surface	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
59:					
Portino, stony surface	40	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
Trevino, stony surface	25	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
Rock outcrop	20	Not rated		Not rated	
60:					
Portneuf, bedrock substratum	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
61:					
Portneuf, bedrock substratum	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
62:					
Portneuf, bedrock substratum	90	Somewhat limited Dustiness	 0.50	Somewhat limited Dustiness	 0.50
63:					
Portneuf	60	Not limited		Not limited	
Quincy	30	Very limited Too sandy	 1.00	Very limited Too sandy	 1.00

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
64:					
Povey	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Dollarhide	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
65:					
Quincy	50	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
Walco	35	Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00
66:					
Rehfield	75	Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Large stones	0.76	Large stones	0.76
		Dustiness	0.50	Dustiness	0.50
68:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Slope	1.00	Slope	1.00
		Large stones	0.76	Large stones	0.76
		Dustiness	0.50	Dustiness	0.50
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Portino, stony surface	15	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
70:					
Roundknoll	80	Somewhat limited		Somewhat limited	
		Too sandy	0.50	Too sandy	0.50
71:					
Soen	80	Not limited		Not limited	
72:					
Splittop	50	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
72:					
Atomic	30	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
73:					
Starbuck	50	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
		Large stones	0.12	Large stones	0.12
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
McPan	30	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Rock outcrop	20	Not rated		Not rated	
75:					
Sunsetcone	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
76:					
Sunsetcone	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
Grassycone	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
77:					
Taunton	50	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Paulville	30	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
78:					
Techick	40	Not limited		Not limited	
Soelberg	35	Not limited		Not limited	
Lesbut	15	Not limited		Not limited	
79:					
Techicknot	45	Not limited		Not limited	
Atom	25	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Nargon	20	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
80:					
Treemold	45	Not limited		Not limited	

Table 15.--Trail Management--Continued

Map symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
80:					
Silentcone	35	Not limited		Not limited	
Lava flows	20	Not rated		Not rated	
81:					
Trevino, stony surface	40	Somewhat limited		Somewhat limited	
		Dustiness	0.50	Dustiness	0.50
Portino, stony surface	30	Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00
		Dustiness	0.50	Dustiness	0.50
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Not limited		Not limited	
Kecko	30	Somewhat limited		Somewhat limited	
		Too sandy	0.34	Too sandy	0.34
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Not limited		Not limited	
Wapi	20	Somewhat limited		Somewhat limited	
		Too sandy	0.37	Too sandy	0.37
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.06	Large stones	0.06
Blackspar	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.16	Large stones	0.16
85:					
Water	100	Not rated		Not rated	

Table 16.--Hydric Soils

(Only the map units with components that are hydric are listed. See text for definition of hydric soil cirteria)

Map symbol and map unit name	Component	Pct. of map unit	Hydric	Landform	Hydric soils criteria			
					Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
5:								
Bringmee-Hutton complex, 1 to 4 percent slopes	Hutton	30	Yes	Flood plains	2B3	Yes	No	No
	Bruneel	10	Yes	Flood plains	2B3	Yes	No	No
	Marshdale	10	Yes	Flood plains	2B3, 4	Yes	Yes	No
6:								
Carey Lake loam, 0 to 2 percent slopes	Hutton	5	Yes	Flood plains	2B3	Yes	No	No
16:								
Farmell-Power-Playas complex, 0 to 2 percent slopes	Playas	15	Yes	Playas	2B3, 3	Yes	No	Yes
22:								
Hutton clay loam, 0 to 2 percent slopes	Hutton	90	Yes	Flood plains	2B3	Yes	No	No
	Marshdale	5	Yes	Flood plains	2B3, 4	Yes	Yes	No
48:								
Molyneux loam, 2 to 4 percent slopes	Hutton	5	Yes	Flood plains	2B3	Yes	No	No
54:								
Playas	Playas	100	Yes	Playas	2B3, 3	Yes	No	Yes

Table 17.--Dwellings and Small Commercial Buildings

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Not limited		Not limited		Not limited	
2:							
Bancroft	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
3:							
Bigcinder	95	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
3A:							
Bigcinder	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
4:							
Blackspar	50	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	0.44	Large stones	0.44	Large stones	0.44
Rock outcrop	30	Not rated		Not rated		Not rated	
5:							
Bringmee	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Hutton	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.81	Shrink-swell	1.00	Depth to saturated zone	0.81
6:							
Carey Lake	90	Not limited		Not limited		Not limited	
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
8:							
Cox	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Large stones	1.00	Large stones	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Rehfield	30	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Deerhorn	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Depth to hard bedrock	0.90
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
Rehfield	30	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Shrink-swell	0.50
				Shrink-swell	0.50	Slope	0.12
Wildors	30	Somewhat limited		Very limited		Somewhat limited	
		Large stones	0.99	Depth to hard bedrock	1.00	Large stones	0.99
		Depth to hard bedrock	0.90	Large stones	0.99	Depth to hard bedrock	0.90
				Depth to thin cemented pan	0.97	Slope	0.12
11:							
Deerhorn	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Depth to hard bedrock	0.64
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
Wildors	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Large stones	1.00	Large stones	1.00
		Slope	0.04	Depth to thin cemented pan	0.99	Depth to hard bedrock	0.90
				Slope	0.04		
Rekima	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	0.77	Depth to thin cemented pan	1.00	Depth to thin cemented pan	1.00
		Depth to thin cemented pan	0.50	Large stones	0.77	Slope	1.00
		Slope	0.04	Slope	0.04	Large stones	0.77
12:							
Deuce	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Nargon	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
						Slope	0.88
Lava flows	15	Not rated		Not rated		Not rated	
13:							
Drage, cool	80	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
14:							
Drage, cool	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
15:							
Echocrater	85	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
16:							
Farmell	55	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
Power	20	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Playas	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
17:							
Goodalfs	55	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Ponding	1.00	Shrink-swell	1.00
		Ponding	1.00	Shrink-swell	0.22	Ponding	1.00
Craters	40	Not limited		Not limited		Not limited	
18:							
Goodington	45	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
				Depth to hard bedrock	0.05		
Manard	40	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
				Depth to thin cemented pan	0.79	Slope	0.12
19:							
Hal	60	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
Moonville	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Howcan	35	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.25	Large stones	0.25	Large stones	0.25
				Depth to hard bedrock	0.13		
Zeebar	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
Hutchley	20	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
21:							
Huddle	65	Not limited		Somewhat limited		Somewhat limited	
				Depth to hard bedrock	0.42	Slope	0.88
Moonville	20	Not limited		Not limited		Somewhat limited	
						Slope	0.88
22:							
Hutton	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.81	Shrink-swell	1.00	Depth to saturated zone	0.81
23:							
Infernocone	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
24:							
Infernocone	90	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
25:							
Justesen	90	Not limited		Not limited		Not limited	
26:							
Justesen	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
27:							
Justesen	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.37	Slope	1.00
		Slope	0.37			Shrink-swell	0.50
Drage	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
28:							
Lava flows	100	Not rated		Not rated		Not rated	
29:							
Lava flows	75	Not rated		Not rated		Not rated	

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29:							
Cinderhurst	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Large stones	1.00	Large stones	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Large stones	1.00	Large stones	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
31:							
Lavacreek	65	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.14	Large stones	0.14	Large stones	0.14
Dollarhide	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
32:							
Lavacreek	65	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.14	Large stones	0.14	Large stones	0.14
Dollarhide	20	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
33:							
Lavacreek, cold	65	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.14	Large stones	0.14	Large stones	0.14
Dollarhide, cold	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
34:							
Lavacreek	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.14	Large stones	0.14	Large stones	0.14
Dollarhide	20	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Grassycone	20	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Lavacreek	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.14	Large stones	0.14	Large stones	0.14
Vitale	35	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.91	Depth to hard bedrock	1.00	Large stones	0.91
		Shrink-swell	0.50			Shrink-swell	0.50
		Depth to hard bedrock	0.20	Large stones	0.91	Depth to hard bedrock	0.20
				Shrink-swell	0.50		
36:							
McBiggam	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
37:							
McCarey	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
Beartrap	35	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.26		
38:							
McCarey	55	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Slope	0.84	Depth to hard bedrock	0.64
Beartrap	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to hard bedrock	0.26		
39:							
McCarey	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.64
Beartrap	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to hard bedrock	0.26	Slope	1.00
				Slope	0.04		
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.03	Depth to hard bedrock	1.00	Slope	0.12
						Depth to hard bedrock	0.03
Justesen	30	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.12

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
McCarey	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.03	Depth to hard bedrock	1.00	Slope	0.12
						Depth to hard bedrock	0.03
Molyneux	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
42:							
McCarey	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.64
Molyneux	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Very limited		Very limited		Very limited	
		Too steep	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.03	Too steep	1.00	Depth to hard bedrock	0.03
Pedleford	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Large stones	1.00
		Too steep	1.00	Large stones	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Too steep	1.00	Depth to hard bedrock	0.20
44:							
McCarey	55	Somewhat limited		Very limited		Very limited	
		Slope	0.96	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Slope	0.96	Depth to hard bedrock	0.64
Pedleford	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.96	Large stones	1.00	Large stones	1.00
		Depth to hard bedrock	0.15	Slope	0.96	Depth to hard bedrock	0.15
45:							
McCarey	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.10
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.20

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46:							
Splittop	20	Somewhat limited Depth to hard bedrock	0.46	Very limited Depth to hard bedrock	1.00	Somewhat limited Slope Depth to hard bedrock	0.50 0.46
Lava flows	15	Not rated		Not rated		Not rated	
47:							
McPan	50	Somewhat limited Depth to hard bedrock Shrink-swell	0.54 0.50	Very limited Depth to hard bedrock Depth to thin cemented pan Shrink-swell	1.00 0.71 0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.54 0.50
Chijer	30	Not limited		Not limited		Not limited	
48:							
Molyneux	90	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
49:							
Nargon	35	Somewhat limited Depth to hard bedrock Slope	0.97 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.97
Atom	30	Somewhat limited Shrink-swell Slope	0.50 0.37	Somewhat limited Shrink-swell Slope	0.50 0.37	Very limited Slope Shrink-swell	1.00 0.50
Techicknot	25	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.50 0.50
50:							
Nargon	50	Somewhat limited Depth to hard bedrock Slope	0.99 0.37	Very limited Depth to hard bedrock Slope	1.00 0.37	Very limited Slope Depth to hard bedrock	1.00 0.99
Deuce	25	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.37	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.37	Very limited Depth to hard bedrock Slope Shrink-swell	1.00 1.00 0.50
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Not limited		Not limited		Not limited	
Hodad	30	Somewhat limited Depth to hard bedrock	0.06	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.06

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52:							
Pagari	45	Very limited		Very limited		Very limited	
		Large stones	1.00	Large stones	1.00	Large stones	1.00
		Shrink-swell	0.50	Depth to hard bedrock	0.77	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Rehfield	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
53:							
Paulville	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
McPan	25	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
		Shrink-swell	0.50	Depth to thin cemented pan	0.71	Shrink-swell	0.50
				Shrink-swell	0.50	Slope	0.12
Starbuck	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.12
54:							
Playas	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Ponding	1.00	Ponding	1.00	Ponding	1.00
55:							
Portino	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
56:							
Portino	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.15
57:							
Portino, stony surface	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
58:							
Portino, stony surface	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.15

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Portino, stony surface	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.15
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
60:							
Portneuf, bedrock substratum	90	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.02		
61:							
Portneuf, bedrock substratum	90	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.02		
62:							
Portneuf, bedrock substratum	90	Not limited		Somewhat limited		Somewhat limited	
				Depth to hard bedrock	0.02	Slope	0.50
63:							
Portneuf	60	Not limited		Not limited		Not limited	
Quincy	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
64:							
Povey	55	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
Dollarhide	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
65:							
Quincy	50	Not limited		Not limited		Not limited	
Walco	35	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to hard bedrock	0.99

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66:							
Rehfield	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
Portino, stony surface	15	Somewhat limited		Very limited		Very limited	
		Slope	0.16	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	0.16	Depth to hard bedrock	0.15
70:							
Roundknoll	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
71:							
Soen	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
72:							
Splittop	50	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
						Slope	0.12
Atomic	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	0.77	Shrink-swell	0.50
				Shrink-swell	0.50	Slope	0.12

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73:							
Starbuck	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
McPan	30	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
		Shrink-swell	0.50	Depth to thin cemented pan	0.71	Slope	0.50
				Shrink-swell	0.50	Shrink-swell	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
75:							
Sunsetcone	85	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
76:							
Sunsetcone	50	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
Grassycone	40	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
77:							
Taunton	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to hard bedrock	0.88	Slope	1.00
				Depth to thin cemented pan	0.29		
				Slope	0.04		
Paulville	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
78:							
Techick	40	Not limited		Not limited		Not limited	
Soelberg	35	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Lesbut	15	Not limited		Not limited		Not limited	
79:							
Techicknot	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79:							
Atom	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
Nargon	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
						Slope	0.88
80:							
Treemold	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
Silentcone	35	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to hard bedrock	0.90
Lava flows	20	Not rated		Not rated		Not rated	
81:							
Trevino, stony surface	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
Portino, stony surface	30	Somewhat limited		Very limited		Very limited	
		Slope	0.16	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	0.16	Depth to hard bedrock	0.15
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
						Slope	0.50
Kecko	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Rock outcrop	20	Not rated		Not rated		Not rated	
83:							
Vining	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
						Slope	0.50

Table 17.--Dwellings and Small Commercial Buildings--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
83:							
Wapi	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Large stones	0.91	Depth to hard bedrock	1.00	Large stones	0.91
		Shrink-swell	0.50			Shrink-swell	0.50
		Depth to hard bedrock	0.20	Large stones	0.91	Depth to hard bedrock	0.20
				Shrink-swell	0.50		
Blackspar	35	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	0.46	Large stones	0.46	Large stones	0.46
85:							
Water	100	Not rated		Not rated		Not rated	

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Very limited		Somewhat limited		Very limited	
		Frost action	1.00	Unstable excavation walls	0.10	Too dense	1.00
		Low strength	1.00				
2:							
Bancroft	90	Very limited		Very limited		Very limited	
		Frost action	1.00	Unstable excavation walls	1.00	Too dense	1.00
		Low strength	1.00				
3:							
Bigcinder	95	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	1.00
3A:							
Bigcinder	90	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	1.00
		Slope	0.16	Slope	0.16	Slope	0.16
4:							
Blackspar	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Frost action	0.50	Large stones	0.44	Depth to bedrock	1.00
		Large stones	0.44	Unstable excavation walls	0.10	Large stones	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
5:							
Bringmee	50	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00		
		Frost action	0.50				
		Low strength	0.22				
Hutton	30	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.48
		Shrink-swell	1.00	Too clayey	0.50		
		Low strength	1.00	Unstable excavation walls	0.10		
		Depth to saturated zone	0.48				
6:							
Carey Lake	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Unstable excavation walls	1.00	Droughty	1.00
		Frost action	0.50	Too steep	1.00	Gravel	1.00
						Too steep	1.00
8:							
Cox	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Large stones	1.00
		Large stones	1.00	Large stones	1.00	Droughty	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	0.04
Rehfield	30	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00		
		Frost action	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
9:							
Deerhorn	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to cemented pan	0.99
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Depth to bedrock	0.90
		Frost action	0.50	Unstable excavation walls	0.10	Droughty	0.24
		Low strength	0.22	Slope	0.04	Slope	0.04
		Slope	0.04				
Rehfield	30	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00		
		Frost action	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to cemented pan	0.99
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Depth to bedrock	0.90
		Frost action	0.50	Unstable excavation walls	0.10	Droughty	0.24
		Low strength	0.22				
Wildors	30	Somewhat limited		Very limited		Very limited	
		Large stones	0.99	Depth to hard bedrock	1.00	Droughty	1.00
		Depth to hard bedrock	0.90	Large stones	0.99	Large stones	1.00
		Frost action	0.50	Depth to thin cemented pan	0.97	Depth to cemented pan	0.97
				Unstable excavation walls	0.10	Depth to bedrock	0.90

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11:							
Deerhorn	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to cemented pan	0.99
		Shrink-swell	0.50	Depth to thin cemented pan	0.99	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10	Droughty	0.24
		Low strength	0.22	Slope	0.04	Slope	0.04
		Slope	0.04				
Wildors	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Droughty	1.00
		Depth to hard bedrock	0.90	Large stones	1.00	Large stones	1.00
		Frost action	0.50	Depth to thin cemented pan	0.99	Depth to cemented pan	0.99
		Slope	0.04	Unstable excavation walls	0.10	Depth to bedrock	0.90
				Slope	0.04	Slope	0.04
Rekima	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to cemented pan	1.00
		Depth to thin cemented pan	1.00	Depth to thin cemented pan	1.00	Droughty	1.00
		Large stones	0.77	Large stones	0.77	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.04	Large stones	1.00
		Slope	0.04			Slope	0.04
12:							
Deuce	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Unstable excavation walls	0.10	Droughty	0.61
		Shrink-swell	0.50			Large stones	0.38
		Frost action	0.50				
Nargon	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to bedrock	0.97
		Frost action	0.50	Unstable excavation walls	0.10	Large stones	0.16
Lava flows	15	Not rated		Not rated		Not rated	
13:							
Drage, cool	80	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00	Gravel	0.38
		Frost action	0.50	Slope	0.04	Droughty	0.07
		Slope	0.04			Slope	0.04
14:							
Drage, cool	85	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00	Gravel	1.00
		Frost action	0.50				

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Echocrater	85	Very limited		Very limited		Very limited	
		Too steep	1.00	Unstable excavation walls	1.00	Droughty	1.00
		Frost action	0.50			Too steep	1.00
				Too steep	1.00	Gravel	0.08
16:							
Farmell	55	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	1.00				
				Too clayey	0.03		
Power	20	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Playas	15	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Salinity	1.00
		Shrink-swell	1.00	Ponding	1.00	Sodium content	1.00
		Ponding	1.00	Too clayey	0.50	Depth to saturated zone	1.00
				Unstable excavation walls	0.10	Droughty	1.00
						Too clayey	1.00
17:							
Goodalfs	55	Very limited		Very limited		Very limited	
		Low strength	1.00	Ponding	1.00	Ponding	1.00
		Shrink-swell	1.00	Unstable excavation walls	0.10		
		Ponding	1.00				
		Frost action	0.50				
Craters	40	Very limited		Very limited		Very limited	
		Frost action	1.00	Unstable excavation walls	1.00	Droughty	1.00
						Gravel	1.00
18:							
Goodington	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Unstable excavation walls	0.10		
		Frost action	0.50				
				Depth to hard bedrock	0.05		
Manard	40	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to cemented pan	0.79
		Shrink-swell	1.00	Depth to thin cemented pan	0.79	Depth to bedrock	0.65
		Depth to hard bedrock	0.64			Large stones	0.54
		Frost action	0.50	Too clayey	0.50		
				Unstable excavation walls	0.10		
19:							
Hal	60	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	1.00	Gravel	0.54

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19:							
Moonville	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	0.10		
20:							
Howcan	35	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Large stones	0.25	Droughty	0.20
		Large stones	0.25	Depth to hard bedrock	0.13	Large stones	0.03
				Unstable excavation walls	0.10		
Zeebar	25	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Unstable excavation walls	1.00	Gravel	0.02
						Large stones	0.01
Hutchley	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Shrink-swell	0.50	Unstable excavation walls	0.10	Depth to bedrock	1.00
		Frost action	0.50			Gravel	0.21
						Large stones	0.03
21:							
Huddle	65	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Depth to hard bedrock	0.42	Gravel	0.79
				Unstable excavation walls	0.10		
Moonville	20	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Unstable excavation walls	0.10		
22:							
Hutton	90	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.48
		Shrink-swell	1.00	Too clayey	0.50		
		Low strength	1.00	Unstable excavation walls	0.10		
		Depth to saturated zone	0.48				
23:							
Infernocone	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	0.73
		Slope	0.16	Slope	0.16	Gravel	0.20
						Slope	0.16
24:							
Infernocone	90	Very limited		Very limited		Very limited	
		Too steep	1.00	Unstable excavation walls	1.00	Too steep	1.00
		Frost action	0.50	Too steep	1.00	Droughty	0.73
						Gravel	0.20

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Justesen	90	Somewhat limited Frost action	 0.50	Somewhat limited Unstable excavation walls	 0.10	Not limited	
26:							
Justesen	90	Somewhat limited Frost action	 0.50	Somewhat limited Unstable excavation walls	 0.10	Not limited	
27:							
Justesen	45	Very limited Low strength Shrink-swell Frost action Slope	 1.00 0.50 0.50 0.37	Somewhat limited Slope Unstable excavation walls	 0.37 0.10	Somewhat limited Slope	 0.37
Drage	40	Somewhat limited Slope Shrink-swell Frost action Low strength	 0.84 0.50 0.50 0.22	Somewhat limited Slope Unstable excavation walls	 0.84 0.10	Somewhat limited Slope Large stones	 0.84 0.03
28:							
Lava flows	100	Not rated		Not rated		Not rated	
29:							
Lava flows	75	Not rated		Not rated		Not rated	
Cinderhurst	20	Very limited Depth to hard bedrock Large stones Slope	 1.00 1.00 0.04	Very limited Depth to hard bedrock Large stones Slope	 1.00 1.00 0.04	Very limited Depth to bedrock Large stones Droughty Slope	 1.00 1.00 1.00 0.04
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Very limited Depth to hard bedrock Large stones Slope	 1.00 1.00 0.04	Very limited Depth to hard bedrock Large stones Slope	 1.00 1.00 0.04	Very limited Depth to bedrock Large stones Droughty Slope	 1.00 1.00 1.00 0.04
31:							
Lavacreek	65	Very limited Too steep Frost action Large stones	 1.00 0.50 0.14	Very limited Too steep Large stones Unstable excavation walls	 1.00 0.14 0.10	Very limited Too steep Gravel Droughty	 1.00 1.00 0.01
Dollarhide	25	Very limited Depth to hard bedrock Too steep Frost action	 1.00 1.00 0.50	Very limited Depth to hard bedrock Too steep	 1.00 1.00	Very limited Too steep Droughty Depth to bedrock Gravel Large stones	 1.00 1.00 1.00 1.00 0.26

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32:							
Lavacreek	65	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Large stones	0.14	Gravel	1.00
		Large stones	0.14	Unstable excavation walls	0.10	Droughty	0.01
Dollarhide	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Depth to bedrock	1.00
						Gravel	1.00
						Large stones	0.26
33:							
Lavacreek, cold	65	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Large stones	0.14	Gravel	1.00
		Large stones	0.14	Unstable excavation walls	0.10	Droughty	0.01
Dollarhide, cold	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Depth to bedrock	1.00
						Gravel	1.00
						Large stones	0.26
34:							
Lavacreek	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Large stones	0.14	Gravel	1.00
		Large stones	0.14	Unstable excavation walls	0.10	Droughty	0.01
Dollarhide	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Frost action	0.50			Depth to bedrock	1.00
						Gravel	1.00
						Large stones	0.26
Grassycone	20	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	1.00		
35:							
Lavacreek	45	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Large stones	0.14	Gravel	1.00
		Large stones	0.14	Unstable excavation walls	0.10	Droughty	0.01
Vitale	35	Very limited		Very limited		Very limited	
		Too steep	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Large stones	0.91			Large stones	1.00
		Shrink-swell	0.50	Too steep	1.00	Droughty	0.98
		Frost action	0.50	Large stones	0.91	Depth to bedrock	0.20
		Depth to hard bedrock	0.20	Unstable excavation walls	0.10	Gravel	0.20

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
36:							
McBiggam	90	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Too clayey	0.12		
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
37:							
McCarey	45	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10		
Beartrap	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	0.26	Large stones	0.01
				Unstable excavation walls	0.10		
38:							
McCarey	55	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	0.84
		Depth to hard bedrock	0.64	Slope	0.84	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10		
Beartrap	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
		Frost action	0.50	Depth to hard bedrock	0.26	Large stones	0.01
				Unstable excavation walls	0.10		
39:							
McCarey	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Beartrap	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	0.26	Slope	0.04
		Slope	0.04	Unstable excavation walls	0.10	Large stones	0.01
				Slope	0.04		
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.03
		Depth to hard bedrock	0.03	Unstable excavation walls	0.10		

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Justesen	30	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
41:							
McCarey	45	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.03
		Depth to hard bedrock	0.03	Unstable excavation walls	0.10		
Molyneux	30	Very limited		Very limited		Not limited	
		Low strength	1.00	Unstable excavation walls	1.00		
		Shrink-swell	0.50				
		Frost action	0.50				
42:							
McCarey	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Molyneux	25	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Very limited		Very limited		Very limited	
		Too steep	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Frost action	0.50	Too steep	1.00	Depth to bedrock	0.03
		Depth to hard bedrock	0.03	Unstable excavation walls	0.10		
Pedleford	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Large stones	1.00
		Too steep	1.00	Large stones	1.00	Too steep	1.00
		Frost action	0.50	Too steep	1.00	Droughty	0.75
		Depth to hard bedrock	0.20	Unstable excavation walls	0.10	Depth to bedrock	0.20
44:							
McCarey	55	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.96	Depth to hard bedrock	1.00	Slope	0.96
		Depth to hard bedrock	0.64	Slope	0.96	Depth to bedrock	0.65
		Frost action	0.50	Unstable excavation walls	0.10		

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44:							
Pedleford	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Depth to hard bedrock	1.00	Large stones	1.00
		Slope	0.96			Slope	0.96
		Frost action	0.50	Large stones	1.00	Droughty	0.50
		Depth to hard bedrock	0.15	Slope	0.96	Depth to bedrock	0.16
				Unstable excavation walls	0.10		
45:							
McCarey	55	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Unstable excavation walls	0.10		
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.20
		Depth to hard bedrock	0.20	Unstable excavation walls	0.10		
Splittop	20	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Frost action	0.50	Unstable excavation walls	0.10		
		Depth to hard bedrock	0.46				
Lava flows	15	Not rated		Not rated		Not rated	
47:							
McPan	50	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to cemented pan	0.71
		Depth to hard bedrock	0.54	Depth to thin cemented pan	0.71	Depth to bedrock	0.54
		Shrink-swell	0.50	Unstable excavation walls	0.10	Large stones	0.01
		Frost action	0.50				
Chijer	30	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		
48:							
Molyneux	90	Very limited		Very limited		Not limited	
		Low strength	1.00	Unstable excavation walls	1.00		
		Shrink-swell	0.50				
		Frost action	0.50				
49:							
Nargon	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to bedrock	0.97
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Unstable excavation walls	0.10	Large stones	0.01

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
49:							
Atom	30	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Slope	0.37	Sodium content	1.00
		Shrink-swell	0.50	Unstable excavation walls	0.10	Slope	0.37
		Frost action	0.50				
		Slope	0.37				
Techicknot	25	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
50:							
Nargon	50	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Depth to bedrock	0.99
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Unstable excavation walls	0.10	Large stones	0.16
						Droughty	0.01
Deuce	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Slope	0.37	Droughty	0.61
		Shrink-swell	0.50	Unstable excavation walls	0.10	Large stones	0.38
		Frost action	0.50			Slope	0.37
		Slope	0.37				
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Very limited		Somewhat limited		Very limited	
		Frost action	1.00	Unstable excavation walls	0.10	Sodium content	1.00
Hodad	30	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.06
		Depth to hard bedrock	0.06	Unstable excavation walls	0.10		
52:							
Pagari	45	Very limited		Very limited		Very limited	
		Large stones	1.00	Large stones	1.00	Large stones	1.00
		Shrink-swell	0.50	Depth to hard bedrock	0.77	Droughty	0.15
		Frost action	0.50	Unstable excavation walls	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Rehfield	30	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00		
		Frost action	0.50				
53:							
Paulville	35	Very limited		Very limited		Not limited	
		Low strength	1.00	Unstable excavation walls	1.00		
		Shrink-swell	0.50				
		Frost action	0.50				

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
McPan	25	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to cemented pan	0.71
		Depth to hard bedrock	0.54	Depth to thin cemented pan	0.71	Depth to bedrock	0.54
		Shrink-swell	0.50	Unstable excavation walls	0.10	Large stones	0.01
		Frost action	0.50				
Starbuck	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Droughty	0.81
54:							
Playas	100	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Salinity	1.00
		Shrink-swell	1.00	Ponding	1.00	Sodium content	1.00
		Ponding	1.00	Too clayey	0.50	Depth to saturated zone	1.00
				Unstable excavation walls	0.10	Droughty	1.00
						Too clayey	1.00
55:							
Portino	90	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.16
		Depth to hard bedrock	0.15	Unstable excavation walls	0.10		
56:							
Portino	90	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.16
		Depth to hard bedrock	0.15	Unstable excavation walls	0.10		
57:							
Portino, stony surface	90	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Large stones	0.20
		Depth to hard bedrock	0.15	Unstable excavation walls	0.10	Depth to bedrock	0.16
58:							
Portino, stony surface	90	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Large stones	0.20
		Depth to hard bedrock	0.15	Unstable excavation walls	0.10	Depth to bedrock	0.16

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Portino, stony surface	40	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Large stones	0.20
		Depth to hard bedrock	0.15	Unstable excavation walls	0.10	Depth to bedrock	0.16
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Large stones	0.68
						Droughty	0.19
Rock outcrop	20	Not rated		Not rated		Not rated	
60:							
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		
				Depth to hard bedrock	0.02		
61:							
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		
				Depth to hard bedrock	0.02		
62:							
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		
				Depth to hard bedrock	0.02		
63:							
Portneuf	60	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Unstable excavation walls	0.10		
Quincy	30	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Unstable excavation walls	1.00	Slope	0.63
				Slope	0.63	Droughty	0.01
64:							
Povey	55	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	0.42
						Gravel	0.26

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
64:							
Dollarhide	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Droughty	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Depth to bedrock	1.00
						Gravel	1.00
						Large stones	0.26
65:							
Quincy	50	Not limited		Very limited		Somewhat limited	
				Unstable excavation walls	1.00	Droughty	0.06
Walco	35	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Droughty	1.00
		Slope	0.01	Unstable excavation walls	1.00	Depth to bedrock	0.99
				Slope	0.01	Slope	0.01
66:							
Rehfield	75	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Unstable excavation walls	1.00		
		Frost action	0.50				
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.16	Droughty	0.99
		Slope	0.16	Unstable excavation walls	0.10	Slope	0.16
						Large stones	0.01
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Too steep	1.00
		Too steep	1.00	Too steep	1.00	Depth to bedrock	1.00
		Frost action	0.50	Unstable excavation walls	0.10	Droughty	0.99
						Large stones	0.01
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.16	Large stones	0.68
		Slope	0.16	Unstable excavation walls	0.10	Droughty	0.19
						Slope	0.16

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
69:							
Portino, stony surface	15	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Large stones	0.20
		Slope	0.16			Slope	0.16
		Depth to hard bedrock	0.15	Slope	0.16	Depth to bedrock	0.16
				Unstable excavation walls	0.10		
70:							
Roundknoll	80	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	1.00
		Slope	0.37			Slope	0.37
				Slope	0.37		
71:							
Soen	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Unstable excavation walls	0.10	Large stones	0.01
		Shrink-swell	0.50				
		Frost action	0.50				
72:							
Splittop	50	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.29
		Frost action	0.50				
		Depth to hard bedrock	0.29	Unstable excavation walls	0.10		
Atomic	30	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to hard bedrock	0.77		
		Frost action	0.50				
				Unstable excavation walls	0.10		
73:							
Starbuck	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Large stones	1.00
		Frost action	0.50	Slope	0.37	Droughty	1.00
		Slope	0.37	Unstable excavation walls	0.10	Depth to bedrock	1.00
						Slope	0.37
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.37	Droughty	0.95
		Slope	0.37	Unstable excavation walls	0.10	Slope	0.37
McPan	30	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to cemented pan	0.71
		Depth to hard bedrock	0.54	Depth to thin cemented pan	0.71	Depth to bedrock	0.54
		Shrink-swell	0.50			Large stones	0.01
		Frost action	0.50	Unstable excavation walls	0.10		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75:							
Sunsetcone	85	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	1.00	Droughty	0.99
76:							
Sunsetcone	50	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	1.00	Droughty	0.99
Grassycone	40	Very limited		Very limited		Very limited	
		Too steep	1.00	Too steep	1.00	Too steep	1.00
		Frost action	1.00	Unstable excavation walls	1.00		
77:							
Taunton	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	0.88	Depth to cemented pan	0.29
		Slope	0.04	Depth to thin cemented pan	0.29	Slope	0.04
				Unstable excavation walls	0.10		
				Slope	0.04		
Paulville	30	Very limited		Very limited		Not limited	
		Low strength	1.00	Unstable excavation walls	1.00		
		Shrink-swell	0.50				
		Frost action	0.50				
78:							
Techick	40	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Unstable excavation walls	1.00		
Soelberg	35	Very limited		Very limited		Not limited	
		Low strength	1.00	Unstable excavation walls	1.00		
		Shrink-swell	0.50				
		Frost action	0.50				
Lesbut	15	Not limited		Very limited		Somewhat limited	
				Unstable excavation walls	1.00	Droughty	0.46
						Gravel	0.46
79:							
Techicknot	45	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Unstable excavation walls	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
Atom	25	Very limited		Somewhat limited		Very limited	
		Low strength	1.00	Unstable excavation walls	0.10	Sodium content	1.00
		Shrink-swell	0.50				
		Frost action	0.50				

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79:							
Nargon	20	Somewhat limited Depth to hard bedrock Frost action	 0.97 0.50	Very limited Depth to hard bedrock Unstable excavation walls	 1.00 0.10	Somewhat limited Depth to bedrock Large stones	 0.97 0.01
80:							
Treemold	45	Very limited Depth to hard bedrock Slope	 1.00 0.01	Very limited Depth to hard bedrock Unstable excavation walls Slope	 1.00 0.10 0.01	Very limited Depth to bedrock Droughty Gravel Slope	 1.00 1.00 1.00 0.01
Silentcone	35	Somewhat limited Depth to hard bedrock Frost action Slope	 0.90 0.50 0.01	Very limited Depth to hard bedrock Unstable excavation walls Slope	 1.00 1.00 0.01	Very limited Gravel Depth to bedrock Droughty Large stones Slope	 1.00 0.90 0.86 0.38 0.01
Lava flows	20	Not rated		Not rated		Not rated	
81:							
Trevino, stony surface	40	Very limited Depth to hard bedrock Frost action Slope	 1.00 0.50 0.16	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00 0.16 0.10	Very limited Depth to bedrock Large stones Droughty Slope	 1.00 0.68 0.19 0.16
Portino, stony surface	30	Somewhat limited Frost action Slope Depth to hard bedrock	 0.50 0.16 0.15	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00 0.16 0.10	Somewhat limited Large stones Slope Depth to bedrock	 0.20 0.16 0.16
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Somewhat limited Depth to hard bedrock Frost action	 0.90 0.50	Very limited Depth to hard bedrock Unstable excavation walls	 1.00 0.10	Somewhat limited Depth to bedrock Droughty Large stones	 0.90 0.79 0.03
Kecko	30	Somewhat limited Frost action	 0.50	Somewhat limited Unstable excavation walls	 0.10	Not limited	
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 18.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
83:							
Vining	40	Somewhat limited Depth to hard bedrock Frost action	 0.84 0.50	Very limited Depth to hard bedrock Unstable excavation walls	 1.00 0.10	Somewhat limited Depth to bedrock Droughty Large stones	 0.84 0.64 0.03
Wapi	20	Very limited Depth to hard bedrock	 1.00	Very limited Depth to hard bedrock Unstable excavation walls	 1.00 0.10	Very limited Droughty Depth to bedrock	 1.00 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Very limited Too steep Large stones Shrink-swell Frost action Depth to hard bedrock	 1.00 0.91 0.50 0.50 0.20	Very limited Depth to hard bedrock Too steep Large stones Unstable excavation walls	 1.00 1.00 0.91 0.10	Very limited Too steep Large stones Droughty Depth to bedrock Gravel	 1.00 1.00 0.98 0.20 0.20
Blackspar	35	Very limited Depth to hard bedrock Too steep Frost action Large stones	 1.00 1.00 0.50 0.46	Very limited Depth to hard bedrock Too steep Large stones Unstable excavation walls	 1.00 1.00 0.46 0.10	Very limited Too steep Droughty Depth to bedrock Large stones	 1.00 1.00 1.00 1.00
85:							
Water	100	Not rated		Not rated		Not rated	

Table 19.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
2:					
Bancroft	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
3:					
Bigcinder	95	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00		
3A:					
Bigcinder	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	0.16		
4:					
Blackspar	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Large stones	0.44	Large stones	0.89
				Seepage	0.50
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	1.00	Slope	0.08
Hutton	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
6:					
Carey Lake	90	Somewhat limited Slow water movement	 0.50	Somewhat limited Seepage	 0.50
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Very limited Seepage, bottom layer Filtering capacity Too steep	 1.00 1.00 1.00	Very limited Seepage Slope	 1.00 1.00
8:					
Cox	35	Very limited Depth to bedrock Seepage, bottom layer Large stones Slope	 1.00 1.00 1.00 0.04	Very limited Depth to hard bedrock Slope Large stones	 1.00 1.00 0.98
Rehfield	30	Very limited Seepage, bottom layer Slow water movement	 1.00 0.50	Very limited Seepage Slope	 1.00 0.32
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Very limited Depth to bedrock Depth to cemented pan Slope	 1.00 1.00 0.04	Very limited Depth to hard bedrock Depth to cemented pan Slope Seepage	 1.00 1.00 1.00 0.50
Rehfield	30	Very limited Seepage, bottom layer Slow water movement	 1.00 0.50	Very limited Seepage Slope	 1.00 0.32
Rock outcrop	20	Not rated		Not rated	
10:					
Deerhorn	45	Very limited Depth to bedrock Depth to cemented pan	 1.00 1.00	Very limited Depth to hard bedrock Depth to cemented pan Slope Seepage	 1.00 1.00 0.68 0.50

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
10:					
Wildors	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Large stones	0.99	Large stones	1.00
				Slope	0.68
				Seepage	0.50
11:					
Deerhorn	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
Wildors	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Large stones	1.00	Large stones	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
Rekima	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Large stones	0.77	Large stones	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
12:					
Deuce	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	1.00
				Seepage	0.50
Nargon	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	1.00
Lava flows	15	Not rated		Not rated	
13:					
Drage, cool	80	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.50

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14:					
Drage, cool	85	Very limited Slow water movement	 1.00	Somewhat limited Seepage	 0.50
15:					
Echocrater	85	Very limited Seepage, bottom layer Too steep Filtering capacity	 1.00 1.00 1.00	Very limited Slope Seepage	 1.00 1.00
16:					
Farmell	55	Very limited Slow water movement	 1.00	Not limited	
Power	20	Somewhat limited Slow water movement	 0.50	Somewhat limited Seepage	 0.50
Playas	15	Very limited Slow water movement Depth to saturated zone Ponding	 1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	 1.00 1.00
17:					
Goodalfs	55	Very limited Slow water movement Ponding	 1.00 1.00	Very limited Ponding Seepage	 1.00 0.32
Craters	40	Somewhat limited Slow water movement	 0.50	Somewhat limited Seepage Slope	 0.50 0.32
18:					
Goodington	45	Very limited Slow water movement Depth to bedrock	 1.00 0.47	Somewhat limited Slope Depth to hard bedrock	 0.08 0.05
Manard	40	Very limited Slow water movement Depth to bedrock Depth to cemented pan	 1.00 1.00 1.00	Very limited Depth to hard bedrock Depth to cemented pan Slope	 1.00 1.00 0.68
19:					
Hal	60	Very limited Too steep Seepage, bottom layer Slow water movement	 1.00 1.00 0.50	Very limited Slope Seepage	 1.00 1.00

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19:					
Moonville	25	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
20:					
Howcan	35	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to bedrock	0.59	Large stones	0.81
		Slow water movement	0.50	Depth to hard bedrock	0.13
		Large stones	0.25		
Zeebar	25	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	0.50
Hutchley	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
21:					
Huddle	65	Somewhat limited		Very limited	
		Depth to bedrock	0.78	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
				Depth to hard bedrock	0.42
Moonville	20	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
22:					
Hutton	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
23:					
Infernocone	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
24:					
Infernocone	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Too steep	1.00	Seepage	1.00

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
25:					
Justesen	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.50
				Slope	0.08
26:					
Justesen	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
				Seepage	0.50
27:					
Justesen	45	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.50
		Slope	0.37		
Drage	40	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.50
		Slope	0.84		
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	
Cinderhurst	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00		
		Slope	0.04	Slope	1.00
				Large stones	0.40
30:					
Lava flows	70	Not rated		Not rated	
Cinderhurst, extremely shallow	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00		
		Slope	0.04	Slope	1.00
31:					
Lavacreek	65	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to bedrock	0.30		
		Large stones	0.14		
Dollarhide	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
32:					
Lavacreek	65	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to bedrock	0.30		
		Large stones	0.14		
Dollarhide	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00
33:					
Lavacreek, cold	65	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to bedrock	0.30		
		Large stones	0.14		
Dollarhide, cold	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00
34:					
Lavacreek	45	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to bedrock	0.30		
		Large stones	0.14		
Dollarhide	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00
Grassycone	20	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35:					
Lavacreek	45	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to bedrock	0.30		
		Large stones	0.14		
Vitale	35	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Depth to bedrock	1.00	Large stones	1.00
		Large stones	0.91	Seepage	0.50
36:					
McBiggam	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
37:					
McCarey	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
Beartrap	35	Somewhat limited		Somewhat limited	
		Depth to bedrock	0.69	Seepage	0.50
		Slow water movement	0.50	Slope	0.32
				Depth to hard bedrock	0.26
38:					
McCarey	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Beartrap	20	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Depth to bedrock	0.69	Seepage	0.50
		Slow water movement	0.50	Depth to hard bedrock	0.26
39:					
McCarey	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
39:					
Beartrap	30	Somewhat limited		Very limited	
		Depth to bedrock	0.69	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
		Slope	0.04	Depth to hard bedrock	0.26
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
Justesen	30	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
				Seepage	0.50
41:					
McCarey	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
Molyneux	30	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
				Seepage	0.50
42:					
McCarey	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
Molyneux	25	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Pedleford	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Large stones	1.00
		Too steep	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
44:					
McCarey	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.96	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Pedleford	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	1.00	Slope	1.00
		Slope	0.96	Large stones	1.00
		Slow water movement	0.50	Seepage	0.50
45:					
McCarey	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
Rock outcrop	25	Not rated		Not rated	
46:					
McCarey	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
Splittop	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Depth to cemented pan	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
Chijer	30	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
48:					
Molyneux	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.50
				Slope	0.08

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
49:					
Nargon	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	1.00
Atom	30	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.37		
Techicknot	25	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
				Seepage	0.28
50:					
Nargon	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	1.00
Deuce	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Slope	1.00
				Seepage	0.50
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
Hodad	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
52:					
Pagari	45	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to bedrock	0.91	Seepage	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Depth to hard bedrock	0.77
Rehfield	30	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.68
53:					
Paulville	35	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
				Slope	0.08

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
McPan	25	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Depth to cemented pan	1.00
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
Starbuck	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.68
				Seepage	0.50
54:					
Playas	100	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00		
55:					
Portino	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
56:					
Portino	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
57:					
Portino, stony surface	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.08
58:					
Portino, stony surface	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
59:					
Portino, stony surface	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
59:					
Trevino, stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.92
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
60:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
		Depth to bedrock	0.41	Depth to hard bedrock	0.02
61:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
		Depth to bedrock	0.41	Slope	0.08
				Depth to hard bedrock	0.02
62:					
Portneuf, bedrock substratum	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
		Depth to bedrock	0.41	Seepage	0.50
				Depth to hard bedrock	0.02
63:					
Portneuf	60	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
Quincy	30	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.63	Slope	1.00
64:					
Povey	55	Very limited		Very limited	
		Too steep	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
		Depth to bedrock	0.27		
Dollarhide	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
65:					
Quincy	50	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.08

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
65:					
Walco	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.01	Seepage	1.00
				Slope	1.00
66:					
Rehfield	75	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	1.00
				Seepage	0.50
68:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
				Seepage	0.50
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	1.00
				Seepage	0.50
Portino, stony surface	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.16	Seepage	0.50
70:					
Roundknoll	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	0.37		

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
71:					
Soen	80	Very limited Slow water movement	 1.00	Not limited	
72:					
Splittop	50	Very limited Depth to bedrock Slow water movement	 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	 1.00 0.68 0.50
Atomic	30	Somewhat limited Depth to bedrock Slow water movement	 0.91 0.50	Somewhat limited Depth to hard bedrock Slope Seepage	 0.77 0.68 0.50
73:					
Starbuck	50	Very limited Depth to bedrock Slope	 1.00 0.37	Very limited Depth to hard bedrock Slope	 1.00 1.00
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	Very limited Depth to bedrock Slope	 1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	 1.00 1.00 0.50
McPan	30	Very limited Depth to cemented pan Depth to bedrock Slow water movement	 1.00 1.00 0.50	Very limited Depth to hard bedrock Depth to cemented pan Slope Seepage	 1.00 1.00 0.92 0.50
Rock outcrop	20	Not rated		Not rated	
75:					
Sunsetcone	85	Very limited Too steep Seepage, bottom layer	 1.00 1.00	Very limited Slope Seepage	 1.00 1.00
76:					
Sunsetcone	50	Very limited Too steep Seepage, bottom layer	 1.00 1.00	Very limited Slope Seepage	 1.00 1.00
Grassycone	40	Very limited Too steep Slow water movement	 1.00 0.50	Very limited Slope Seepage	 1.00 1.00

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77:					
Taunton	50	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to bedrock	0.96	Slope	1.00
		Slow water movement	0.50	Depth to hard bedrock	0.88
		Slope	0.04	Seepage	0.50
Paulville	30	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
78:					
Techick	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	1.00		
Soelberg	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	1.00		
Lesbut	15	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
79:					
Techicknot	45	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
				Seepage	0.28
Atom	25	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
Nargon	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	1.00
80:					
Treemold	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.01	Slope	1.00
Silentcone	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.32	Slope	1.00
		Slope	0.01	Seepage	0.68
Lava flows	20	Not rated		Not rated	

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
81:					
Trevino, stony surface	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.16	Slope	1.00
				Seepage	0.50
Portino, stony surface	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.16	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Very limited		Very limited	
		Filtering capacity	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Slope	0.92
Kecko	30	Somewhat limited		Very limited	
		Slow water movement	0.50	Seepage	1.00
				Slope	0.68
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.92
Wapi	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
				Slope	0.92
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Depth to bedrock	1.00	Large stones	1.00
		Large stones	0.91	Seepage	0.50
Blackspar	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Too steep	1.00	Slope	1.00
		Large stones	0.46	Large stones	0.04

Table 19.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
85:					
Water	100	Not rated		Not rated	

Table 20.--Potential Source of Gravel, Sand, and Topsoil

(The following criteria are used for determining the rating class. A rating of good source for gravel and sand requires a value greater than or equal to 0.75 for either the thickest or bottom layer. A rating of fair source for gravel and sand requires a value greater than or equal to 0.08 and less than 0.75 for either the thickest or bottom layer. A rating of poor source for gravel and sand requires a value of less than 0.08 for both the thickest and bottom layers. A rating of good source for topsoil requires a value greater than 0.99 for all limiting features. A rating of fair source for topsoil requires a value greater than 0.00 for all limiting features. A rating of poor source for topsoil is assigned if any limiting feature has a value of 0.00)

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
2:							
Bancroft	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.88
		Thickest layer	0.00	Thickest layer	0.00		
3:							
Bigcinder	95	Good		Good		Poor	
		Thickest layer	0.66	Thickest layer	0.66	Slope	0.00
				Bottom layer	0.90	Too sandy	0.00
						Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
3A:							
Bigcinder	90	Good		Good		Poor	
		Thickest layer	0.66	Thickest layer	0.66	Too sandy	0.00
				Bottom layer	0.90	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Slope	0.84
4:							
Blackspar	50	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
Rock outcrop	30	Not rated		Not rated		Not rated	

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5:							
Bringmee	50	Poor		Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.18
		Thickest layer	0.00	Bottom layer	0.04	Hard to reclaim (rock fragments)	0.20
Hutton	30	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Wetness depth	0.29
6:							
Carey Lake	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.92
		Thickest layer	0.00	Thickest layer	0.00		
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.08	Hard to reclaim (rock fragments)	0.00
		Thickest layer	0.00	Bottom layer	0.10	Rock fragments	0.00
						Slope	0.00
						Too sandy	0.22
8:							
Cox	35	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Slope	0.96
Rehfield	30	Poor		Fair		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.11		
Rock outcrop	20	Not rated		Not rated		Not rated	
9:							
Deerhorn	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.01
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.10
						Slope	0.96

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Rehfield	30	Poor		Fair		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.11		
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.01
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.10
Wildors	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.03
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.10
						Rock fragments	0.75
11:							
Deerhorn	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.01
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.35
						Slope	0.96
Wildors	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.01
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.10
						Rock fragments	0.65
						Slope	0.96
Rekima	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
						Slope	0.96
12:							
Deuce	45	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Carbonate content	0.71
						Rock fragments	0.97

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Nargon	20	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.03
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.92
						Carbonate content	0.96
Lava flows	15	Not rated		Not rated		Not rated	
13:							
Drage, cool	80	Fair		Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.00
		Bottom layer	0.49	Bottom layer	0.04	Hard to reclaim (rock fragments)	0.00
						Too clayey	0.69
						Slope	0.96
14:							
Drage, cool	85	Fair		Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.00
		Bottom layer	0.49	Bottom layer	0.04	Hard to reclaim (rock fragments)	0.00
						Too clayey	0.69
15:							
Echocrater	85	Good		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.08	Too sandy	0.00
				Bottom layer	0.90	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Slope	0.00
16:							
Farmell	55	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00		
Power	20	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Playas	15	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Wetness depth	0.00
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.00
						Salinity	0.00
						Too clayey	0.00
17:							
Goodalfs	55	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
Craters	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.01
		Thickest layer	0.00	Thickest layer	0.00		
18:							
Goodington	45	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.95
Manard	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.21
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.35
						Rock fragments	0.88
19:							
Hal	60	Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Slope	0.00
		Thickest layer	0.00	Bottom layer	0.13	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Moonville	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00		
20:							
Howcan	35	Poor		Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Slope	0.00
		Thickest layer	0.00	Bottom layer	0.03	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.00

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Zeebar	25	Fair		Poor		Poor	
		Thickest layer	0.07	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.25	Thickest layer	0.00	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.00
Hutchley	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
						Too clayey	0.81
21:							
Huddle	65	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.76
		Thickest layer	0.00	Thickest layer	0.00		
						Rock fragments	0.95
Moonville	20	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
22:							
Hutton	90	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Wetness depth	0.29
23:							
Infernocone	85	Good		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.02	Hard to reclaim (rock fragments)	0.00
				Bottom layer	0.90		
						Rock fragments	0.00
						Slope	0.84
24:							
Infernocone	90	Good		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.02	Hard to reclaim (rock fragments)	0.00
				Bottom layer	0.90		
						Rock fragments	0.00
						Slope	0.00

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Justesen	90	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
26:							
Justesen	90	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
27:							
Justesen	45	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.63
		Thickest layer	0.00	Thickest layer	0.00		
Drage	40	Fair		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.00
		Bottom layer	0.14	Thickest layer	0.00	Rock fragments	0.00
						Slope	0.16
						Too clayey	0.63
28:							
Lava flows	100	Not rated		Not rated		Not rated	
29:							
Lava flows	75	Not rated		Not rated		Not rated	
Cinderhurst	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.00
						Slope	0.96
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.00
						Slope	0.96

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Lavacreek	65	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Dollarhide	25	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
32:							
Lavacreek	65	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Dollarhide	20	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
33:							
Lavacreek, cold	65	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Dollarhide, cold	25	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
34:							
Lavacreek	45	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Dollarhide	20	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
Grassycone	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.05	Thickest layer	0.01	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.00
35:							
Lavacreek	45	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Vitale	35	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
						Too clayey	0.94
36:							
McBiggam	90	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
37:							
McCarey	45	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.35
		Thickest layer	0.00	Thickest layer	0.00		
Beartrap	35	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.88
		Thickest layer	0.00	Thickest layer	0.00		
						Carbonate content	0.90
						Rock fragments	0.96

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
38:							
McCarey	55	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.16
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.35
Beartrap	20	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.16
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.88
						Carbonate content	0.90
						Rock fragments	0.96
39:							
McCarey	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.35
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.96
Beartrap	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.88
		Thickest layer	0.00	Thickest layer	0.00	Carbonate content	0.90
						Rock fragments	0.96
						Slope	0.96
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.76
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.97
Justesen	30	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
41:							
McCarey	45	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.76
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.97
Molyneux	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.41
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.88

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
McCarey	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.35
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.96
Molyneux	25	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.41
		Thickest layer	0.00	Thickest layer	0.00		
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.76
						Depth to bedrock	0.97
Pedleford	30	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.00
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.00
						Depth to bedrock	0.79
44:							
McCarey	55	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.04
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.35
Pedleford	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.04
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.31
						Depth to bedrock	0.84
45:							
McCarey	55	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.90
		Thickest layer	0.00	Thickest layer	0.00		
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.76
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.79

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46:							
Splittop	20	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.54
		Thickest layer	0.00	Thickest layer	0.00	Carbonate content	0.99
Lava flows	15	Not rated		Not rated		Not rated	
47:							
McPan	50	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.29
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.46
						Rock fragments	0.88
Chijer	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Carbonate content	0.84
		Thickest layer	0.00	Thickest layer	0.00	Salinity	0.88
						Rock fragments	0.98
48:							
Molyneux	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.41
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.88
49:							
Nargon	35	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.03
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.63
						Rock fragments	0.92
						Carbonate content	0.96
Atom	30	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.00
		Thickest layer	0.00	Thickest layer	0.00	Salinity	0.00
						Slope	0.63
						Carbonate content	0.95
Techicknot	25	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Nargon	50	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.01
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.63
						Carbonate content	0.89
						Rock fragments	0.99
Deuce	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.63
						Carbonate content	0.71
						Rock fragments	0.97
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.00
		Thickest layer	0.00	Thickest layer	0.00	Carbonate content	0.99
Hodad	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.93
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.98
52:							
Pagari	45	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Slope	0.96
Rehfield	30	Poor		Fair		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.11		
53:							
Paulville	35	Poor		Poor		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.04		
McPan	25	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.29
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.46
						Rock fragments	0.88

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Starbuck	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00		
54:							
Playas	100	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Wetness depth	0.00
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.00
						Salinity	0.00
						Too clayey	0.00
55:							
Portino	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.84
						Carbonate content	0.96
56:							
Portino	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.84
						Carbonate content	0.96
57:							
Portino, stony surface	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.84
						Rock fragments	0.96
						Carbonate content	0.96
58:							
Portino, stony surface	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.84
						Rock fragments	0.96
						Carbonate content	0.96

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Portino, stony surface	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.84
						Rock fragments	0.96
						Carbonate content	0.96
Trevino, stony surface	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.76
Rock outcrop	20	Not rated		Not rated		Not rated	
60:							
Portneuf, bedrock substratum	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Salinity	0.88
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.98
61:							
Portneuf, bedrock substratum	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Salinity	0.88
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.98
62:							
Portneuf, bedrock substratum	90	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Salinity	0.88
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.98
63:							
Portneuf	60	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Salinity	0.88
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.90
						Carbonate content	0.94
Quincy	30	Poor		Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.13	Too sandy	0.00
		Thickest layer	0.00	Thickest layer	0.30	Slope	0.37

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
64:							
Povey	55	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Dollarhide	25	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
65:							
Quincy	50	Poor		Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.02	Too sandy	0.00
		Thickest layer	0.00	Thickest layer	0.30		
Walco	35	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.03	Too sandy	0.00
		Thickest layer	0.00	Thickest layer	0.04	Depth to bedrock	0.01
66:							
Rehfield	75	Poor		Fair		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.11		
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.84
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.00
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
69:							
Trevino, stony surface	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.76
						Slope	0.84
Portino, stony surface	15	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.84
						Depth to bedrock	0.84
						Rock fragments	0.96
						Carbonate content	0.96
70:							
Roundknoll	80	Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.08	Hard to reclaim (rock fragments)	0.00
		Thickest layer	0.00	Bottom layer	0.38	Rock fragments	0.00
						Too sandy	0.22
						Slope	0.63
71:							
Soen	80	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Rock fragments	0.82
		Thickest layer	0.00	Thickest layer	0.00		
72:							
Splittop	50	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.71
		Thickest layer	0.00	Thickest layer	0.00	Carbonate content	0.99
Atomic	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Hard to reclaim (rock fragments)	0.08
		Thickest layer	0.00	Thickest layer	0.00	Sodium content	0.40
						Rock fragments	0.88
						Carbonate content	0.95

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73:							
Starbuck	50	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.63
						Rock fragments	0.75
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.63
McPan	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.29
		Thickest layer	0.00	Thickest layer	0.00	Depth to bedrock	0.46
						Rock fragments	0.88
Rock outcrop	20	Not rated		Not rated		Not rated	
75:							
Sunsetcone	85	Good		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.00
				Bottom layer	0.90	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
76:							
Sunsetcone	50	Good		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.00
				Bottom layer	0.90	Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Grassycone	40	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Slope	0.00
		Thickest layer	0.05	Thickest layer	0.01	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.00

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77:							
Taunton	50	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to cemented pan	0.71
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.88
						Slope	0.96
						Carbonate content	0.99
Paulville	30	Poor		Poor		Good	
		Bottom layer	0.00	Thickest layer	0.00		
		Thickest layer	0.00	Bottom layer	0.04		
78:							
Techick	40	Fair		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
		Bottom layer	0.45	Bottom layer	0.83		
Soelberg	35	Fair		Good		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
		Bottom layer	0.68	Bottom layer	0.91		
Lesbut	15	Fair		Fair		Poor	
		Thickest layer	0.00	Thickest layer	0.00	Hard to reclaim (rock fragments)	0.00
		Bottom layer	0.57	Bottom layer	0.08		
						Rock fragments	0.00
						Too sandy	0.14
79:							
Techicknot	45	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
Atom	25	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.00
		Thickest layer	0.00	Thickest layer	0.00	Salinity	0.00
						Carbonate content	0.95
Nargon	20	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.03
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.92
						Carbonate content	0.93

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80:							
Treemold	45	Fair		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Rock fragments	0.00
		Bottom layer	0.20	Thickest layer	0.00	Depth to bedrock	0.00
Silentcone	35	Fair		Poor		Poor	
		Thickest layer	0.09	Bottom layer	0.00	Rock fragments	0.00
		Bottom layer	0.40	Thickest layer	0.00	Depth to bedrock	0.10
Lava flows	20	Not rated		Not rated		Not rated	
81:							
Trevino, stony surface	40	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.00	Rock fragments	0.76
						Slope	0.84
Portino, stony surface	30	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Sodium content	0.60
		Thickest layer	0.00	Thickest layer	0.00	Slope	0.84
						Depth to bedrock	0.84
						Rock fragments	0.96
						Carbonate content	0.96
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Poor		Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00	Depth to bedrock	0.10
		Thickest layer	0.00	Bottom layer	0.06		
Kecko	30	Poor		Poor		Good	
		Bottom layer	0.00	Bottom layer	0.00		
		Thickest layer	0.00	Thickest layer	0.00		
Rock outcrop	20	Not rated		Not rated		Not rated	
83:							
Vining	40	Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Depth to bedrock	0.16
		Thickest layer	0.00	Thickest layer	0.00		

Table 20.--Potential Source of Gravel, Sand, and Topsoil--Continued

Map symbol and soil name	Pct of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
83:							
Wapi	20	Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.02	Depth to bedrock	0.00
		Thickest layer	0.00	Thickest layer	0.02	Too sandy	0.36
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
						Too clayey	0.94
Blackspar	35	Poor		Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00	Slope	0.00
		Bottom layer	0.00	Thickest layer	0.00	Rock fragments	0.00
						Depth to bedrock	0.00
85:							
Water	100	Not rated		Not rated		Not rated	

Table 21.--Potential Source of Reclamation Material and Roadfill

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Bancroft	90	Fair		Poor	
		Carbonate content	0.68	Low strength	0.00
		Water erosion	0.90		
2:					
Bancroft	90	Fair		Good	
		Low organic matter content	0.12		
		Water erosion	0.90		
3:					
Bigcinder	95	Poor		Poor	
		Too sandy	0.00	Slope	0.00
		Wind erosion	0.00		
		Droughty	0.00		
		Low organic matter content	0.00		
3A:					
Bigcinder	90	Poor		Good	
		Too sandy	0.00		
		Wind erosion	0.00		
		Droughty	0.00		
		Low organic matter content	0.00		
4:					
Blackspar	50	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
		Cobble content	0.56	Cobble content	0.67
		Low organic matter content	0.88		
Rock outcrop	30	Not rated		Not rated	
5:					
Bringmee	50	Fair		Fair	
		Low organic matter content	0.88	Low strength	0.78
				Shrink-swell	0.97
Hutton	30	Poor		Poor	
		Too clayey	0.00	Low strength	0.00
				Shrink-swell	0.23
				Wetness depth	0.29
6:					
Carey Lake	90	Fair		Good	
		Low organic matter content	0.88		
		Water erosion	0.99		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
7:					
Cinder land	50	Not rated		Not rated	
Northcrater	45	Poor		Fair	
		Wind erosion	0.00	Slope	0.32
		Droughty	0.00		
		Too sandy	0.22		
8:					
Cox	35	Poor		Poor	
		Stone content	0.00	Depth to bedrock	0.00
		Droughty	0.00	Stones	0.00
		Depth to bedrock	0.00	Cobble content	0.99
		Low organic matter content	0.88		
		Cobble content	0.97		
Rehfield	30	Poor		Good	
		Low organic matter content	0.00		
Rock outcrop	20	Not rated		Not rated	
9:					
Deerhorn	40	Fair		Poor	
		Depth to cemented pan	0.01	Depth to bedrock	0.00
		Droughty	0.02	Depth to cemented pan	0.00
		Depth to bedrock	0.10	Low strength	0.78
		Carbonate content	0.80	Shrink-swell	0.99
		Water erosion	0.99		
Rehfield	30	Poor		Good	
		Low organic matter content	0.00		
Rock outcrop	20	Not rated		Not rated	
10:					
Deerhorn	45	Fair		Poor	
		Depth to cemented pan	0.01	Depth to bedrock	0.00
		Droughty	0.02	Depth to cemented pan	0.00
		Depth to bedrock	0.10	Low strength	0.78
		Water erosion	0.68	Shrink-swell	0.99
		Carbonate content	0.80		
Wildors	30	Poor		Poor	
		Stone content	0.00	Depth to bedrock	0.00
		Droughty	0.00	Depth to cemented pan	0.00
		Depth to cemented pan	0.03	Stones	0.00
		Depth to bedrock	0.10		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11:					
Deerhorn	40	Fair		Poor	
		Depth to cemented pan	0.01	Depth to bedrock	0.00
		Droughty	0.02	Depth to cemented pan	0.00
		Depth to bedrock	0.35	Low strength	0.78
		Carbonate content	0.80	Shrink-swell	0.99
		Water erosion	0.99		
Wildors	30	Poor		Poor	
		Stone content	0.00	Depth to bedrock	0.00
		Droughty	0.00	Depth to cemented pan	0.00
		Depth to cemented pan	0.01	Stones	0.00
		Depth to bedrock	0.10		
Rekima	20	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to cemented pan	0.00	Depth to cemented pan	0.00
		Depth to bedrock	0.00	Stones	0.89
		Low organic matter content	0.12	Cobble content	0.92
		Stone content	0.23		
		Cobble content	0.92		
12:					
Deuce	45	Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Low strength	0.00
		Carbonate content	0.46	Shrink-swell	0.87
		Low organic matter content	0.88		
		Water erosion	0.90		
Nargon	20	Fair		Poor	
		Depth to bedrock	0.03	Depth to bedrock	0.00
		Droughty	0.35		
		Carbonate content	0.80		
		Low organic matter content	0.88		
		Water erosion	0.90		
		Stone content	0.99		
Lava flows	15	Not rated		Not rated	
13:					
Drage, cool	80	Fair		Good	
		Low organic matter content	0.12		
		Droughty	0.66		
		Carbonate content	0.92		
		Too clayey	0.95		
14:					
Drage, cool	85	Fair		Good	
		Low organic matter content	0.88		
		Droughty	0.91		
		Carbonate content	0.92		
		Too clayey	0.95		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
15:					
Echocrater	85	Poor		Poor	
		Too sandy	0.00	Slope	0.00
		Wind erosion	0.00		
		Droughty	0.00		
		Low organic matter content	0.00		
16:					
Farmell	55	Poor		Poor	
		Too clayey	0.00	Low strength	0.00
		Low organic matter content	0.12	Shrink-swell	0.13
		Carbonate content	0.46		
		Water erosion	0.68		
Power	20	Fair		Fair	
		Low organic matter content	0.12	Shrink-swell	0.99
		Water erosion	0.68		
		Carbonate content	0.80		
Playas	15	Poor		Poor	
		Droughty	0.00	Wetness depth	0.00
		Salinity	0.00	Shrink-swell	0.12
		Sodium content	0.00		
		Too clayey	0.00		
		Too alkaline	0.00		
		Low organic matter content	0.01		
17:					
Goodalfs	55	Fair		Poor	
		Low organic matter content	0.50	Low strength	0.00
				Shrink-swell	0.78
		Water erosion	0.90		
Craters	40	Poor		Good	
		Wind erosion	0.00		
		Droughty	0.00		
		Low organic matter content	0.50		
18:					
Goodington	45	Poor		Poor	
		Too clayey	0.00	Low strength	0.00
		Low organic matter content	0.12	Shrink-swell	0.64
				Depth to bedrock	0.95
		Carbonate content	0.46		
		Water erosion	0.68		
Manard	40	Fair		Poor	
		Depth to cemented pan	0.21	Depth to bedrock	0.00
		Depth to bedrock	0.35	Depth to cemented pan	0.00
		Droughty	0.44	Low strength	0.00
		Water erosion	0.99	Shrink-swell	0.16
		Stone content	0.99		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19:					
Hal	60	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Low organic matter content	0.12		
		Water erosion	0.90		
Moonville	25	Poor		Fair	
		Wind erosion	0.00	Slope	0.08
		Water erosion	0.37		
		Low organic matter content	0.88		
20:					
Howcan	35	Poor		Poor	
		Stone content	0.00	Stones	0.00
		Droughty	0.37	Slope	0.00
				Depth to bedrock	0.87
Zeebar	25	Fair		Poor	
		Droughty	0.77	Slope	0.00
		Low organic matter content	0.88		
Hutchley	20	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
		Too clayey	0.98	Shrink-swell	0.87
21:					
Huddle	65	Poor		Fair	
		Wind erosion	0.00	Depth to bedrock	0.58
		Low organic matter content	0.12		
		Carbonate content	0.20		
		Water erosion	0.37		
Moonville	20	Poor		Good	
		Wind erosion	0.00		
		Water erosion	0.37		
		Low organic matter content	0.88		
22:					
Hutton	90	Poor		Poor	
		Too clayey	0.00	Low strength	0.00
				Shrink-swell	0.23
				Wetness depth	0.29
23:					
Infernocone	85	Poor		Good	
		Wind erosion	0.00		
		Low organic matter content	0.00		
		Droughty	0.00		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
24:					
Infernocone	90	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Low organic matter content	0.00		
		Droughty	0.00		
25:					
Justesen	90	Fair		Good	
		Low organic matter content	0.12		
		Carbonate content	0.68		
26:					
Justesen	90	Fair		Good	
		Low organic matter content	0.12		
		Carbonate content	0.68		
27:					
Justesen	45	Fair		Good	
		Low organic matter content	0.12		
		Carbonate content	0.68		
Drage	40	Fair		Fair	
		Low organic matter content	0.12	Cobble content	0.87
		Too clayey	0.88		
		Carbonate content	0.92		
		Droughty	0.95		
28:					
Lava flows	100	Not rated		Not rated	
29:					
Lava flows	75	Not rated		Not rated	
Cinderhurst	20	Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00
		Cobble content	0.00	Cobble content	0.35
		Droughty	0.00		
		Depth to bedrock	0.00		
30:					
Lava flows	70	Not rated		Not rated	
Cinderhurst, extremely shallow	20	Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00
		Cobble content	0.00		
		Droughty	0.00		
		Depth to bedrock	0.00		
31:					
Lavacreek	65	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Cobble content	0.63	Cobble content	0.06
		Droughty	0.92		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31:					
Dollarhide	25	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
32:					
Lavacreek	65	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Cobble content	0.63	Cobble content	0.06
		Droughty	0.92		
Dollarhide	20	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
33:					
Lavacreek, cold	65	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Cobble content	0.63	Cobble content	0.06
		Droughty	0.92		
Dollarhide, cold	25	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
34:					
Lavacreek	45	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Cobble content	0.63	Cobble content	0.06
		Droughty	0.92		
Dollarhide	20	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
Grassycone	20	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Too acid	0.32		
35:					
Lavacreek	45	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Cobble content	0.63	Cobble content	0.06
		Droughty	0.92		
Vitale	35	Poor		Poor	
		Droughty	0.00	Slope	0.00
		Cobble content	0.17	Depth to bedrock	0.00
		Depth to bedrock	0.79	Cobble content	0.00
		Too clayey	0.99	Shrink-swell	0.99
36:					
McBiggam	90	Fair		Poor	
		Low organic matter content	0.12	Low strength	0.00
		Water erosion	0.68	Shrink-swell	0.59

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37:					
McCarey	45	Fair		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Droughty	0.94		
Beartrap	35	Fair		Fair	
		Carbonate content	0.46	Depth to bedrock	0.74
		Low organic matter content	0.88		
		Water erosion	0.99		
38:					
McCarey	55	Fair		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Droughty	0.94		
Beartrap	20	Fair		Fair	
		Carbonate content	0.46	Depth to bedrock	0.74
		Low organic matter content	0.88		
		Water erosion	0.99		
39:					
McCarey	40	Fair		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Droughty	0.94		
Beartrap	30	Fair		Fair	
		Carbonate content	0.46	Depth to bedrock	0.74
		Low organic matter content	0.88		
		Water erosion	0.99		
Rock outcrop	25	Not rated		Not rated	
40:					
McCarey	50	Fair		Poor	
		Low organic matter content	0.50	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Depth to bedrock	0.97		
Justesen	30	Fair		Good	
		Low organic matter content	0.12		
		Carbonate content	0.68		
		Water erosion	0.99		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41:					
McCarey	45	Fair		Poor	
		Low organic matter content	0.50	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Depth to bedrock	0.97		
Molyneux	30	Fair		Poor	
		Water erosion	0.99	Low strength	0.00
				Shrink-swell	0.90
42:					
McCarey	40	Fair		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Droughty	0.94		
Molyneux	25	Fair		Fair	
		Water erosion	0.99	Low strength	0.22
				Shrink-swell	0.90
Rock outcrop	20	Not rated		Not rated	
43:					
McCarey	50	Fair		Poor	
		Low organic matter content	0.50	Depth to bedrock	0.00
				Slope	0.98
		Carbonate content	0.80		
		Water erosion	0.90		
		Depth to bedrock	0.97		
Pedleford	30	Poor		Poor	
		Stone content	0.00	Stones	0.00
		Droughty	0.00	Depth to bedrock	0.00
		Low organic matter content	0.12	Cobble content	0.81
				Slope	0.98
		Depth to bedrock	0.79		
		Carbonate content	0.92		
44:					
McCarey	55	Fair		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00
		Carbonate content	0.80		
		Water erosion	0.90		
		Droughty	0.94		
Pedleford	30	Poor		Poor	
		Stone content	0.00	Stones	0.00
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.84		
		Carbonate content	0.92		
45:					
McCarey	55	Fair		Poor	
		Carbonate content	0.80	Depth to bedrock	0.00
		Water erosion	0.90		
		Depth to bedrock	0.90		
Rock outcrop	25	Not rated		Not rated	

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
46:					
McCarey	60	Fair		Poor	
		Low organic matter content	0.50	Depth to bedrock	0.00
		Water erosion	0.68		
		Depth to bedrock	0.79		
		Carbonate content	0.80		
Splittop	20	Fair		Poor	
		Depth to bedrock	0.54	Depth to bedrock	0.00
		Water erosion	0.68	Low strength	0.00
		Droughty	0.69		
		Low organic matter content	0.88		
		Carbonate content	0.97		
Lava flows	15	Not rated		Not rated	
47:					
McPan	50	Fair		Poor	
		Depth to cemented pan	0.29	Depth to cemented pan	0.00
		Depth to bedrock	0.46	Low strength	0.00
		Droughty	0.62	Depth to bedrock	0.00
		Water erosion	0.68	Shrink-swell	0.99
		Carbonate content	0.68		
		Low organic matter content	0.88		
Chijer	30	Fair		Good	
		Low organic matter content	0.12		
		Water erosion	0.37		
		Carbonate content	0.46		
48:					
Molyneux	90	Fair		Poor	
		Water erosion	0.99	Low strength	0.00
				Shrink-swell	0.90
49:					
Nargon	35	Fair		Poor	
		Depth to bedrock	0.03	Depth to bedrock	0.00
		Droughty	0.38		
		Carbonate content	0.80		
		Low organic matter content	0.88		
		Stone content	0.99		
		Water erosion	0.99		
Atom	30	Poor		Poor	
		Sodium content	0.00	Low strength	0.00
		Low organic matter content	0.12	Shrink-swell	0.87
		Salinity	0.50		
		Water erosion	0.68		
		Carbonate content	0.92		
Techicknot	25	Fair		Poor	
		Carbonate content	0.80	Low strength	0.00
		Water erosion	0.99	Shrink-swell	0.96

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
50:					
Nargon	50	Fair		Poor	
		Depth to bedrock	0.01	Depth to bedrock	0.00
		Low organic matter content	0.12	Stones	0.99
		Droughty	0.19		
		Carbonate content	0.80		
		Stone content	0.84		
		Water erosion	0.90		
Deuce	25	Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Low strength	0.00
		Carbonate content	0.46	Shrink-swell	0.87
		Low organic matter content	0.88		
		Water erosion	0.90		
Lava flows	15	Not rated		Not rated	
51:					
Neeley	60	Poor		Good	
		Sodium content	0.00		
		Too alkaline	0.00		
		Water erosion	0.06		
		Low organic matter content	0.12		
		Carbonate content	0.80		
Hodad	30	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Depth to bedrock	0.93		
		Sodium content	0.97		
52:					
Pagari	45	Fair		Poor	
		Cobble content	0.11	Cobble content	0.00
		Low organic matter content	0.12	Depth to bedrock	0.23
		Droughty	0.24	Stones	0.82
		Stone content	0.77		
		Carbonate content	0.97		
Rehfield	30	Poor		Fair	
		Wind erosion	0.00	Shrink-swell	0.99
		Low organic matter content	0.12		
53:					
Paulville	35	Fair		Good	
		Low organic matter content	0.12		
		Water erosion	0.37		
		Carbonate content	0.80		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
McPan	25	Fair		Poor	
		Depth to cemented pan	0.29	Depth to cemented pan	0.00
		Depth to bedrock	0.46	Low strength	0.00
		Droughty	0.62	Depth to bedrock	0.00
		Water erosion	0.68	Shrink-swell	0.99
		Carbonate content	0.68		
		Low organic matter content	0.88		
Starbuck	20	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00		
		Low organic matter content	0.12		
		Water erosion	0.68		
54:					
Playas	100	Poor		Poor	
		Droughty	0.00	Wetness depth	0.00
		Salinity	0.00	Shrink-swell	0.12
		Sodium content	0.00		
		Too clayey	0.00		
		Too alkaline	0.00		
		Low organic matter content	0.01		
55:					
Portino	90	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
56:					
Portino	90	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
57:					
Portino, stony surface	90	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
58:					
Portino, stony surface	90	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
59:					
Portino, stony surface	40	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
Trevino, stony surface	25	Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stones	0.42
		Droughty	0.04		
		Low organic matter content	0.88		
Rock outcrop	20	Not rated		Not rated	
60:					
Portneuf, bedrock substratum	90	Fair		Fair	
		Water erosion	0.06	Depth to bedrock	0.98
		Low organic matter content	0.50		
		Carbonate content	0.80		
		Sodium content	0.97		
61:					
Portneuf, bedrock substratum	90	Fair		Fair	
		Water erosion	0.06	Depth to bedrock	0.98
		Low organic matter content	0.50		
		Carbonate content	0.80		
		Sodium content	0.97		
62:					
Portneuf, bedrock substratum	90	Fair		Fair	
		Water erosion	0.06	Depth to bedrock	0.98
		Low organic matter content	0.50		
		Carbonate content	0.80		
		Sodium content	0.97		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
63:					
Portneuf	60	Fair		Good	
		Water erosion	0.06		
		Low organic matter content	0.12		
		Carbonate content	0.80		
		Sodium content	0.90		
Quincy	30	Poor		Good	
		Too sandy	0.00		
		Wind erosion	0.00		
		Low organic matter content	0.12		
64:					
Povey	55	Fair		Poor	
		Droughty	0.19	Slope	0.00
		Cobble content	0.88	Cobble content	0.98
Dollarhide	25	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
65:					
Quincy	50	Poor		Good	
		Too sandy	0.00		
		Wind erosion	0.00		
		Low organic matter content	0.88		
Walco	35	Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00
		Wind erosion	0.00		
		Droughty	0.00		
		Depth to bedrock	0.01		
		Low organic matter content	0.96		
66:					
Rehfield	75	Poor		Fair	
		Wind erosion	0.00	Shrink-swell	0.99
		Low organic matter content	0.12		
67:					
Rock outcrop	60	Not rated		Not rated	
Tenno, very stony surface	25	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00		
		Too alkaline	0.00		
		Low organic matter content	0.88		
		Water erosion	0.90		
68:					
Rock outcrop	60	Not rated		Not rated	

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
68:					
Tenno, very stony surface	25	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
		Too alkaline	0.00		
		Low organic matter content	0.88		
		Water erosion	0.90		
69:					
Rock outcrop	50	Not rated		Not rated	
Trevino, stony surface	25	Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stones	0.42
		Droughty	0.04		
		Low organic matter content	0.88		
Portino, stony surface	15	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
70:					
Roundknoll	80	Poor		Good	
		Wind erosion	0.00		
		Droughty	0.00		
		Too sandy	0.22		
		Low organic matter content	0.50		
		Carbonate content	0.97		
71:					
Soen	80	Fair		Fair	
		Low organic matter content	0.12	Low strength	0.22
		Water erosion	0.68	Shrink-swell	0.72
		Carbonate content	0.92		
72:					
Splittop	50	Fair		Poor	
		Droughty	0.64	Depth to bedrock	0.00
		Water erosion	0.68	Low strength	0.00
		Depth to bedrock	0.71		
		Low organic matter content	0.88		
		Carbonate content	0.97		
Atomic	30	Fair		Fair	
		Sodium content	0.40	Depth to bedrock	0.23
		Carbonate content	0.46	Shrink-swell	0.87
		Low organic matter content	0.88		
		Water erosion	0.99		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
73:					
Starbuck	50	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00		
		Low organic matter content	0.12		
		Water erosion	0.68		
Lava flows	30	Not rated		Not rated	
74:					
Starbuck	40	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00		
		Low organic matter content	0.12		
		Water erosion	0.68		
McPan	30	Fair		Poor	
		Depth to cemented pan	0.29	Depth to cemented pan	0.00
		Depth to bedrock	0.46	Low strength	0.00
		Droughty	0.62	Depth to bedrock	0.00
		Carbonate content	0.68	Shrink-swell	0.99
		Low organic matter content	0.88		
		Water erosion	0.90		
Rock outcrop	20	Not rated		Not rated	
75:					
Sunsetcone	85	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Low organic matter content	0.00		
		Droughty	0.00		
		Too acid	0.50		
76:					
Sunsetcone	50	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Low organic matter content	0.00		
		Droughty	0.00		
		Too acid	0.50		
Grassycone	40	Poor		Poor	
		Wind erosion	0.00	Slope	0.00
		Too acid	0.32		
77:					
Taunton	50	Fair		Poor	
		Low organic matter content	0.12	Depth to cemented pan	0.00
		Water erosion	0.68	Depth to bedrock	0.12
		Depth to cemented pan	0.71		
		Droughty	0.81		
		Carbonate content	0.92		

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77:					
Paulville	30	Fair		Good	
		Low organic matter content	0.12		
		Water erosion	0.37		
		Carbonate content	0.80		
78:					
Techick	40	Fair		Good	
		Low organic matter content	0.88		
		Water erosion	0.90		
		Carbonate content	0.92		
Soelberg	35	Fair		Good	
		Low organic matter content	0.12		
		Carbonate content	0.92		
Lesbut	15	Fair		Good	
		Droughty	0.10		
		Low organic matter content	0.12		
		Too sandy	0.14		
79:					
Techicknot	45	Fair		Poor	
		Carbonate content	0.80	Low strength	0.00
		Water erosion	0.99	Shrink-swell	0.96
Atom	25	Poor		Poor	
		Sodium content	0.00	Low strength	0.00
		Low organic matter content	0.12	Shrink-swell	0.87
		Salinity	0.50		
		Water erosion	0.68		
		Carbonate content	0.92		
Nargon	20	Fair		Poor	
		Depth to bedrock	0.03	Depth to bedrock	0.00
		Droughty	0.38		
		Carbonate content	0.80		
		Low organic matter content	0.88		
		Stone content	0.99		
		Water erosion	0.99		
80:					
Treemold	45	Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00
		Droughty	0.00		
		Depth to bedrock	0.00		
		Too acid	0.97		
Silentcone	35	Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00
		Droughty	0.00		
		Depth to bedrock	0.10		
Lava flows	20	Not rated		Not rated	

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
81:					
Trevino, stony surface	40	Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stones	0.42
		Droughty	0.04		
		Low organic matter content	0.88		
Portino, stony surface	30	Fair		Poor	
		Low organic matter content	0.12	Depth to bedrock	0.00
		Water erosion	0.37		
		Sodium content	0.60		
		Carbonate content	0.80		
		Depth to bedrock	0.84		
Rock outcrop	20	Not rated		Not rated	
82:					
Vining	35	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.10		
		Low organic matter content	0.12		
		Stone content	0.90		
Kecko	30	Poor		Good	
		Wind erosion	0.00		
		Low organic matter content	0.12		
		Carbonate content	0.92		
		Water erosion	0.99		
Rock outcrop	20	Not rated		Not rated	
83:					
Vining	40	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Low organic matter content	0.12	Stones	0.94
		Depth to bedrock	0.16		
		Stone content	0.62		
Wapi	20	Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00
		Droughty	0.00		
		Depth to bedrock	0.00		
		Too sandy	0.36		
		Low organic matter content	0.82		
Rock outcrop	20	Not rated		Not rated	
84:					
Vitale	45	Poor		Poor	
		Droughty	0.00	Slope	0.00
		Cobble content	0.17	Depth to bedrock	0.00
		Depth to bedrock	0.79	Cobble content	0.00
		Too clayey	0.99	Shrink-swell	0.99

Table 21.--Potential Source of Reclamation Material and Roadfill--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value
84:					
Blackspar	35	Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00
		Cobble content	0.54	Cobble content	0.87
		Low organic matter content	0.88		
85:					
Water	100	Not rated		Not rated	

Table 22.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Bancroft	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.19	Depth to water	1.00
2:							
Bancroft	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.74	Depth to water	1.00
		Slope	0.68				
3:							
Bigcinder	95	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
3A:							
Bigcinder	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
4:							
Blackspar	50	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.50		
				Large stones	0.44		
Rock outcrop	30	Not rated		Not rated		Not rated	
5:							
Bringmee	50	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
Hutton	30	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Hard to pack	0.69		
6:							
Carey Lake	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.97	Depth to water	1.00
7:							
Cinder land	50	Not rated		Not rated		Not rated	
Northcrater	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
8:							
Cox	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Large stones	1.00		
Rehfield	30	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.08				
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Deerhorn	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to cemented pan	0.99	Piping	0.89		
		Depth to bedrock	0.98				
		Seepage	0.70				
Rehfield	30	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.08				
Rock outcrop	20	Not rated		Not rated		Not rated	
10:							
Deerhorn	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.99	Thin layer	0.99	Depth to water	1.00
		Depth to bedrock	0.98	Piping	0.89		
		Seepage	0.70				
		Slope	0.32				
Wildors	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.99	Large stones	0.99	Depth to water	1.00
		Depth to bedrock	0.98	Thin layer	0.99		
		Seepage	0.70				
		Slope	0.32				
11:							
Deerhorn	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to cemented pan	0.99	Piping	0.89		
		Depth to bedrock	0.91				
		Seepage	0.70				
Wildors	30	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones	1.00	Depth to water	1.00
		Depth to cemented pan	0.99	Thin layer	0.99		
		Depth to bedrock	0.98				
		Seepage	0.70				
Rekima	20	Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Large stones	0.77		
		Slope	1.00				
12:							
Deuce	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.92	Piping	0.29		
Nargon	20	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.99	Thin layer	0.99	Depth to water	1.00
		Slope	0.92	Piping	0.22		
		Seepage	0.04				
Lava flows	15	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13:							
Drage, cool	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.99	Depth to water	1.00
		Seepage	0.70				
14:							
Drage, cool	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.58	Depth to water	1.00
15:							
Echocrater	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
16:							
Farmell	55	Somewhat limited		Not limited		Very limited	
		Seepage	0.04			Depth to water	1.00
Power	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.62	Depth to water	1.00
Playas	15	Not rated		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Salinity	1.00	Salinity and saturated zone	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
				Ponding	1.00		
17:							
Goodalfs	55	Somewhat limited		Very limited		Very limited	
		Seepage	0.57	Ponding	1.00	Depth to water	1.00
				Piping	0.36		
Craters	40	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.08				
18:							
Goodington	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Thin layer	0.01	Depth to water	1.00
		Depth to bedrock	0.01				
Manard	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.95	Thin layer	0.95	Depth to water	1.00
				Hard to pack	0.21		
		Depth to bedrock	0.91				
		Slope	0.32				
19:							
Hal	60	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
Moonville	25	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70				

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Howcan	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.80	Depth to water	1.00
		Slope	1.00	Large stones	0.25		
		Depth to bedrock	0.03	Thin layer	0.03		
Zeebar	25	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.12	Depth to water	1.00
		Seepage	0.70				
Hutchley	20	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
21:							
Huddle	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Piping	0.99	Depth to water	1.00
		Seepage	0.70	Thin layer	0.11		
		Depth to bedrock	0.10				
Moonville	20	Somewhat limited		Very limited		Very limited	
		Slope	0.92	Piping	1.00	Depth to water	1.00
		Seepage	0.70				
22:							
Hutton	90	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Hard to pack	0.69		
23:							
Infernocone	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
24:							
Infernocone	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
25:							
Justesen	90	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
26:							
Justesen	90	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.68				
27:							
Justesen	45	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to water	1.00
		Seepage	0.70				
Drage	40	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to water	1.00
		Seepage	0.70				
28:							
Lava flows	100	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29:							
Lava flows	75	Not rated		Not rated		Not rated	
Cinderhurst	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Large stones	1.00	Depth to water	1.00
		Slope	1.00	Seepage	1.00		
				Thin layer	1.00		
				Piping	0.84		
30:							
Lava flows	70	Not rated		Not rated		Not rated	
Cinderhurst, extremely shallow	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Large stones	1.00	Depth to water	1.00
		Slope	1.00	Seepage	1.00		
				Thin layer	1.00		
31:							
Lavacreek	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.88	Depth to water	1.00
		Slope	1.00	Large stones	0.14		
Dollarhide	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
32:							
Lavacreek	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.88	Depth to water	1.00
		Slope	1.00	Large stones	0.14		
Dollarhide	20	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
33:							
Lavacreek, cold	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.88	Depth to water	1.00
		Slope	1.00	Large stones	0.14		
Dollarhide, cold	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
34:							
Lavacreek	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.88	Depth to water	1.00
		Slope	1.00	Large stones	0.14		
Dollarhide	20	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
Grassycone	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.76	Depth to water	1.00
		Slope	1.00				
35:							
Lavacreek	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.88	Depth to water	1.00
		Slope	1.00	Large stones	0.14		

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Vitale	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones	0.91	Depth to water	1.00
		Depth to bedrock	0.77	Thin layer	0.77		
		Seepage	0.70				
36:							
McBiggam	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Piping	0.24	Depth to water	1.00
		Seepage	0.04				
37:							
McCarey	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.91	Thin layer	0.91	Depth to water	1.00
		Seepage	0.70	Piping	0.83		
		Slope	0.08				
Beartrap	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.06	Depth to water	1.00
		Slope	0.08				
		Depth to bedrock	0.06				
38:							
McCarey	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Piping	0.83		
		Seepage	0.70				
Beartrap	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.06	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.06				
39:							
McCarey	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Piping	0.83		
		Seepage	0.70				
Beartrap	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.06	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.06				
Rock outcrop	25	Not rated		Not rated		Not rated	
40:							
McCarey	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.69	Depth to water	1.00
		Depth to bedrock	0.61	Thin layer	0.61		
		Slope	0.32				
Justesen	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.83	Depth to water	1.00
		Slope	0.32				
41:							
McCarey	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.69	Depth to water	1.00
		Depth to bedrock	0.61	Thin layer	0.61		
		Slope	0.32				

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
Molyneux	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Piping	0.12	Depth to water	1.00
		Seepage	0.04				
42:							
McCarey	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Piping	0.83		
		Seepage	0.70				
Molyneux	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Piping	0.44	Depth to water	1.00
		Seepage	0.04				
Rock outcrop	20	Not rated		Not rated		Not rated	
43:							
McCarey	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.69	Depth to water	1.00
		Seepage	0.70	Thin layer	0.61		
		Depth to bedrock	0.61				
Pedleford	30	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones	1.00	Depth to water	1.00
		Depth to bedrock	0.77	Piping	1.00		
		Seepage	0.70	Thin layer	0.77		
44:							
McCarey	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Piping	0.83		
		Seepage	0.70				
Pedleford	30	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones	1.00	Depth to water	1.00
		Depth to bedrock	0.74	Piping	1.00		
		Seepage	0.70	Thin layer	0.74		
45:							
McCarey	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Piping	0.44		
		Slope	0.68				
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
McCarey	60	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Piping	0.85	Depth to water	1.00
		Seepage	0.70	Thin layer	0.77		
		Slope	0.68				
Splittop	20	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70	Piping	0.36		
		Slope	0.68				
Lava flows	15	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47:							
McPan	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.93	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.88	Piping	0.14		
		Seepage	0.70				
		Slope	0.08				
Chijer	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
48:							
Molyneux	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Piping	0.12	Depth to water	1.00
49:							
Nargon	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to bedrock	0.99	Piping	0.22		
		Seepage	0.04				
Atom	30	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.04	Salinity	0.50		
Techicknot	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.68	Piping	0.03	Depth to water	1.00
		Seepage	0.54				
50:							
Nargon	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to bedrock	0.99	Piping	0.28		
		Seepage	0.04				
Deuce	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	0.29		
Lava flows	15	Not rated		Not rated		Not rated	
51:							
Neeley	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
Hodad	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.66	Thin layer	0.66		
52:							
Pagari	45	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.22		
		Depth to bedrock	0.22				
Rehfield	30	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.32				

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Paulville	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.91	Depth to water	1.00
McPan	25	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.93	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.88	Piping	0.14		
		Seepage	0.70				
		Slope	0.32				
Starbuck	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.32	Piping	1.00		
54:							
Playas	100	Not rated		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Salinity	1.00	Salinity and saturated zone	1.00
				Hard to pack	1.00	Cutbanks cave	0.10
				Ponding	1.00		
55:							
Portino	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.74		
56:							
Portino	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.74		
		Slope	0.68				
57:							
Portino, stony surface	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.74		
58:							
Portino, stony surface	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.74		
		Slope	0.68				
59:							
Portino, stony surface	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.74		
		Slope	0.68				
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.68	Piping	1.00		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60:							
Portneuf, bedrock substratum	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
61:							
Portneuf, bedrock substratum	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
62:							
Portneuf, bedrock substratum	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.68	Thin layer	0.01		
		Depth to bedrock	0.01				
63:							
Portneuf	60	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.08				
Quincy	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
64:							
Povey	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.04	Depth to water	1.00
		Seepage	0.70				
Dollarhide	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00				
65:							
Quincy	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.05	Depth to water	1.00
Walco	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.99	Depth to water	1.00
		Slope	1.00	Seepage	0.33		
		Depth to bedrock	0.99				
66:							
Rehfield	75	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.08				
67:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	1.00		

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68:							
Rock outcrop	60	Not rated		Not rated		Not rated	
Tenno, very stony surface	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
69:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Trevino, stony surface	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	1.00		
Portino, stony surface	15	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.74	Thin layer	0.74		
		Seepage	0.70				
70:							
Roundknoll	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
71:							
Soen	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Piping	0.05	Depth to water	1.00
72:							
Splittop	50	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.81	Thin layer	0.81	Depth to water	1.00
		Seepage	0.70	Piping	0.35		
		Slope	0.32				
Atomic	30	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.32	Thin layer	0.22		
		Depth to bedrock	0.22				
73:							
Starbuck	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	1.00		
Lava flows	30	Not rated		Not rated		Not rated	
74:							
Starbuck	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	0.99		
McPan	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.93	Thin layer	0.93	Depth to water	1.00
				Piping	0.14		
		Depth to bedrock	0.88				
		Seepage	0.70				
		Slope	0.68				
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75:							
Sunsetcone	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
76:							
Sunsetcone	50	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00				
Grassycone	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.76	Depth to water	1.00
		Slope	1.00				
77:							
Taunton	50	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Depth to cemented pan	0.81	Thin layer	0.81		
		Seepage	0.70				
		Depth to bedrock	0.29				
Paulville	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.91	Depth to water	1.00
		Slope	0.08				
78:							
Techick	40	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
Soelberg	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
Lesbut	15	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Depth to water	1.00
79:							
Techicknot	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.68	Piping	0.03	Depth to water	1.00
		Seepage	0.54				
Atom	25	Somewhat limited		Very limited		Very limited	
		Slope	0.92	Piping	1.00	Depth to water	1.00
		Seepage	0.04	Salinity	0.50		
Nargon	20	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.99	Thin layer	0.99	Depth to water	1.00
		Slope	0.92	Piping	0.22		
		Seepage	0.04				
80:							
Treemold	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to water	1.00
		Slope	1.00	Thin layer	1.00		
Silentcone	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Seepage	0.50		
		Seepage	0.81				
Lava flows	20	Not rated		Not rated		Not rated	

Table 22.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
81:							
Trevino, stony surface	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	1.00		
Portino, stony surface	30	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.74	Thin layer	0.74		
		Seepage	0.70				
Rock outcrop	20	Not rated		Not rated		Not rated	
82:							
Vining	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98				
		Slope	0.68				
Kecko	30	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.32				
Rock outcrop	20	Not rated		Not rated		Not rated	
83:							
Vining	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.96	Depth to water	1.00
		Depth to bedrock	0.96				
		Slope	0.68				
Wapi	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.68				
Rock outcrop	20	Not rated		Not rated		Not rated	
84:							
Vitale	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones	0.91	Depth to water	1.00
		Depth to bedrock	0.77	Thin layer	0.77		
		Seepage	0.70				
Blackspar	35	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.50		
				Large stones	0.46		
85:							
Water	100	Not rated		Not rated		Not rated	

Table 23.--Map Unit Setting, Parent Material, and Ecological Site

(Miscellaneous land type components such as Lava flows and Rock outcrop are not shown in this table)

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
1:								
Bancroft	90	1-4	4,800-5,200	12-16	Plains	Lava plains	Silty alluvium and/or loess	LOAMY 12-16 ARTR4/FEID (R010AY023ID)
2:								
Bancroft	90	4-8	4,800-5,200	12-16	Plains	Lava plains	Silty alluvium and/or loess	LOAMY 12-16 ARTR4/FEID (R010AY023ID)
3:								
Bigcinder	95	20-50	5,400-6,490	14-18	Lava plains	Volcanic cones	Volcanic ash and/or cinders derived from volcanic rock	Cinder North 12-16 PIFL2/PUTR2 (R010AY043ID)
3A:								
Bigcinder	90	2-20	5,720-6,070	14-18	Lava plains	Volcanic cones	Volcanic ash and/or cinders derived from volcanic rock	Cinder 12-16 PIFL2/ARTRV (R010AY044ID)
4:								
Blackspar	50	45-75	5,200-8,500	12-16	Mountains	Mountain slopes	Colluvium over siltstone, sandstone, and/or conglomerate	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)
5:								
Bringmee	50	1-4	4,800-6,000	12-16	Valleys	Fan remnants	Mixed alluvium	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Hutton	30	1-2	4,800-6,000	12-16	Valleys	Flood plains	Volcanic ash and/or mixed alluvium	WET MEADOW CAREX-JUNCUS (R010AY039ID)
6:								
Carey Lake	90	0-2	4,700-6,000	12-16	Valleys	Fan remnants	Mixed alluvium	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
7:								
Northcrater	45	2-25	4,800-6,510	12-16	Lava plains	Volcanic cones	Volcanic ash and/or cinders	Cinder Garden 12-16 EROVD-LERE7 (R010AY046ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
8:								
Cox	35	2-15	4,300-4,700	10-12	Plains	Lava plains	Eolian deposits over volcanic rock	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
Rehfield	30	2-6	4,300-4,700	10-12	Plains	Lava plains	Mixed alluvium and/or eolian deposits	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
9:								
Deerhorn	40	2-15	4,500-4,700	9-13	Lava plains	Buttes	Eolian deposits over basalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Rehfield	30	2-6	4,500-4,700	9-13	Plains	Lava plains	Mixed alluvium and/or eolian deposits	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
10:								
Deerhorn	45	2-8	4,600-5,000	8-12	Lava plains	Buttes	Eolian deposits over bsalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Wildors	30	2-8	4,600-5,000	8-12	Lava plains	Buttes	Eolian deposits over a duripan over basalt	STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)
11:								
Deerhorn	40	2-15	4,500-4,700	10-13	Lava plains	Buttes	Eolian deposits over basalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Wildors	30	2-15	4,500-4,700	10-13	Lava plains	Buttes	Eolian deposits over a duripan over basalt	STONY LOAM 10-12 ARTRT/PSSPS (R011AY011ID)
Rekima	20	2-15	4,500-4,700	10-13	Lava plains	Buttes	Mixed alluvium over basalt	SHALLOW LOAMY 8-12 ARTRW8/PSSPS (R011XY004ID)
12:								
Deuce	45	2-12	4,700-5,500	9-11	Lava plains	Volcanic cones	Mixed alluvium and/or loess over basalt	SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)
Nargon	20	2-12	4,700-5,500	9-11	Plains	Lava plains	Mixed alluvium over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
13:								
Drage, cool--------	80	2-15	4,800-6,100	12-16	Foothills	Hillslopes	Mixed alluvium	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
14:								
Drage, cool--------	85	0-3	5,000-6,100	14-16	Foothills	Hillslopes	Mixed alluvium	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
15:								
Echocrater---------	85	20-40	4,870-6,400	12-18	Lava plains	Volcanic cones	Colluvium derived from volcanic ash and cinders	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
16:								
Farmell------------	55	0-2	4,000-4,600	8-12	Plains	Lava plains	Mixed silty alluvium	PLAYA 8-12 ARTR4/PSSPS (R011BY008ID)
Power--------------	20	0-2	4,000-4,600	8-12	Plains	Lava plains	Mixed alluvium and/or loess	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
17:								
Goodalfs-----------	55	0-1	5,500-6,120	14-18	Valleys	Valley floors	Silty alluvium and/or loess	Loamy Bottom 12-16 LECI4 (R010AY042ID)
Craters------------	40	1-5	5,500-6,120	14-18	Valleys	Fan remnants	Alluvium derived from volcanic ash and/or cinders	Cindery North 12-16 ARTRV-PUTR2/FEID-PSSPS (R010AY047ID)
18:								
Goodington---------	45	2-4	4,800-6,200	12-16	Plains	Lava plains	Loess over basalt	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
Manard-------------	40	2-8	4,800-6,200	12-16	Plains	Lava plains	Colluvium and residuum derived from rhyolite and/or basalt	CLAYEY 12-16 ARARL/FEID (R010AY001ID)
19:								
Hal----------------	60	15-60	5,300-8,500	16-18	Foothills	Hillslopes	Volcanic ash and cinders	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
19:								
Moonville	25	15-60	5,300-8,500	16-18	Foothills	Hillslopes	Volcanic ash and/or cinders	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
20:								
Howcan	35	15-60	5,000-9,000	12-16	Mountains	Mountain slopes	Colluvium over latite and/or andesite	LOAMY 12-16 ARTRV/FEID-PSSPS (R012XY012ID)
Zeebar	25	15-50	5,000-9,000	12-16	Mountains	Mountain slopes	Colluvium derived from igneous rock	LOAMY 16-22 ARTRV/FEID (R012XY021ID)
Hutchley	20	15-35	5,000-9,000	12-16	Mountains	Mountain slopes	Loess and/or colluvium over latite and/or andesite	CLAYEY SOUTH SLOPE 12-16 ARAR8/PSSPS (R012XY029ID)
21:								
Huddle	65	2-12	4,600-6,000	12-16	Plains	Lava plains	Volcanic ash and/or cinders from eolian deposits over volcanic rock	LOAMY 12-16 ARTRT/LECI4 (R011BY007ID)
Moonville	20	2-12	4,600-6,000	12-16	Plains	Lava plains	Volcanic ash and/or cinders	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
22:								
Hutton	90	0-2	4,950-6,000	12-16	Valleys	Flood plains	Volcanic ash and/or mixed alluvium	WET MEADOW CAREX-JUNCUS (R010AY039ID)
23:								
Infernocone	85	2-20	4,840-6,320	12-16	Lava plains	Volcanic cones	Volcanic ash and/or cinders	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
24:								
Infernocone	90	20-40	4,890-6,420	12-16	Lava plains	Volcanic cones	Volcanic ash and/or cinders	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
25:								
Justesen	90	2-4	4,700-6,000	12-16	Foothills	Fan remnants	Mixed alluvium	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
26:								
Justesen	90	4-8	4,700-6,000	12-16	Foothills	Fan remnants	Mixed alluvium	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
27:								
Justesen----------	45	1-20	5,800-7,000	12-16	Foothills	Fan remnants	Mixed alluvium	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Drage----------	40	5-20	5,800-7,000	12-16	Foothills	Fan remnants	Mixed alluvium	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
29:								
Cinderhurst--------	20	2-15	4,800-6,000	12-16	Lava plains	Lava fields	Eolian deposits, volcanic ash, and/or cinders over basalt	MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)
30:								
Cinderhurst, extremely shallow	20	2-15	5,380-6,100	12-16	Lava plains	Lava fields	Eolian deposits, volcanic ash, and/or cinders over basalt	MIXED SHRUB 12-16 ARTRV/PONE3 (R010AY020ID)
31:								
Lavacreek----------	65	15-60	7,000-9,300	16-24	Mountains	Mountain slopes	Volcanic ash over colluvium over sandstone, conglomerate, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Dollarhide----------	25	15-60	7,000-9,300	16-24	Mountains	Mountain slopes	Colluvium over siltstone, conglomerate, sandstone, and/or quartzite	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
32:								
Lavacreek----------	65	30-60	5,500-8,500	18-22	Mountains	Mountain slopes	Volcanic ash over colluvium over sandstone, conglomerate, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
32:								
Dollarhide----------	20	30-60	5,500-8,500	18-22	Mountains	Mountain slopes	Colluvium over siltstone, conglomerate, sandstone, and/or quartzite	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
33:								
Lavacreek, cold----	65	15-60	7,000-9,250	16-24	Mountains	Mountain slopes	Volcanic ash over colluvium over sandstone, conglomerate, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Dollarhide, cold---	25	15-60	7,000-9,250	16-24	Mountains	Mountain slopes	Colluvium over siltstone, conglomerate, sandstone, and/or quartzite	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
34:								
Lavacreek----------	45	30-60	6,000-8,500	16-24	Mountains	Mountain slopes	Volcanic ash over colluvium over sandstone, conglomerate, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Dollarhide----------	20	30-60	6,000-8,500	16-24	Mountains	Mountain slopes	Colluvium over siltstone, conglomerate, sandstone, and/or quartzite	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
Grassycone----------	20	30-60	6,000-8,500	16-24	Mountains	Mountain slopes	Colluvium derived from volcanic ash and cinders with loess influence	QUAKING ASPEN 20+ POTR5 (R010AY016ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
35:								
Lavacreek----------	45	30-60	6,000-8,500	16-20	Mountains	Mountain slopes	Volcanic ash over colluvium over sandstone, conglomerate, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Vitale----------	35	30-60	6,000-8,500	16-20	Mountains	Mountain slopes	Colluvium over sandstone, conglomerate, and/or siltstone	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)
36:								
McBiggam----------	90	2-8	5,300-5,600	12-16	Plains	Lava plains	Loess and silty alluvium over residuum derived from basalt	LOAMY 12-16 ARTRV/FEID-PSSPS (R010AY004ID)
37:								
McCarey----------	45	1-6	4,700-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Beartrap----------	35	2-6	4,700-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
38:								
McCarey----------	55	6-20	4,800-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Beartrap----------	20	6-20	4,800-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
39:								
McCarey----------	40	2-15	4,700-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
39:								
Beartrap	30	2-15	4,700-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	LOAMY BOTTOM 8-14 ARTRT/LECI4 (R011XY015ID)
40:								
McCarey	50	2-8	4,700-5,000	12-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Justesen	30	2-8	4,700-5,000	12-16	Plains	Lava plains	Mixed alluvium	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
41:								
McCarey	45	2-8	4,800-5,400	12-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Molyneux	30	2-8	4,800-5,400	12-16	Plains	Lava plains	Mixed alluvium and/or colluvium	LOAMY 12-16 ARTR4/FEID (R010AY023ID)
42:								
McCarey	40	2-15	4,800-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Molyneux	25	2-8	4,800-5,400	11-16	Plains	Lava plains	Mixed alluvium and/or colluvium	LOAMY 12-16 ARTR4/FEID (R010AY023ID)
43:								
McCarey	50	2-30	4,800-5,400	12-16	Lava plains	Buttes	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Pedleford	30	2-30	4,800-5,400	12-16	Lava plains	Buttes	Mixed alluvium and/or eolian deposits over basalt	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
44:								
McCarey	55	8-20	4,700-5,400	12-16	Lava plains	Buttes	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
44:								
Pedleford	30	8-20	4,700-5,400	12-16	Lava plains	Buttes	Mixed alluvium and/or eolian deposits over basalt	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
45:								
McCarey	55	0-12	4,500-5,500	12-16	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
46:								
McCarey	60	4-8	5,200-5,500	10-12	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Splittop	20	4-8	5,200-5,500	10-12	Plains	Lava plains	Eolian deposits over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
47:								
McPan	50	1-6	4,000-4,600	8-12	Lava plains	Buttes	Silty alluvium and/or loess over volcanic rock	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Chijer	30	1-4	4,000-4,600	8-12	Lava plains	Buttes	Eolian deposits	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
48:								
Molyneux	90	2-4	4,800-6,000	12-16	Plains	Lava plains	Mixed alluvium and/or colluvium	LOAMY 12-16 ARTR4/FEID (R010AY023ID)
49:								
Nargon	35	2-20	4,500-5,800	9-11	Plains	Lava plains	Mixed alluvium over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Atom	30	2-20	4,500-5,800	9-11	Plains	Lava plains	Mixed alluvium	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Techicknot	25	0-12	4,500-5,800	9-11	Plains	Lava plains	Mixed alluvium	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
50:								
Nargon	50	2-20	4,500-5,800	9-11	Plains	Lava plains	Mixed alluvium over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
50:								
Deuce	25	2-20	4,500-5,800	9-11	Lava plains	Volcanic cones	Mixed alluvium and/or loess over basalt	SHALLOW STONY 8-12 ARTRW8/PSSPS (R011BY009ID)
51:								
Neeley	60	2-4	4,300-5,000	11-13	Plains	Lava plains	Loess	LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)
Hodad	30	2-4	4,300-5,000	11-13	Plains	Lava plains	Loess over basalt	LOAMY 12-16 ARTRV/PSSPS-FEID (R013XY001ID)
52:								
Pagari	45	2-15	4,400-4,800	10-13	Plains	Lava plains	Mixed alluvium over basalt	SANDY LOAM 12-16 ARTRT/PSSPS (R010AY022ID)
Rehfield	30	2-8	4,400-4,800	10-13	Plains	Lava plains	Mixed alluvium and/or eolian deposits	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
53:								
Paulville	35	1-4	3,400-4,700	8-11	Lava plains	Buttes	Mixed alluvium, lacustrine deposits, and/or loess	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
McPan	25	1-8	3,400-4,700	8-11	Lava plains	Buttes	Silty alluvium and/or loess over volcanic rock	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)
Starbuck	20	1-8	3,400-4,700	8-11	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
55:								
Portino	90	2-4	4,200-4,780	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
56:								
Portino	90	4-8	4,200-4,700	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
57:								
Portino, stony surface	90	2-4	4,200-4,770	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
58:								
Portino, stony surface	90	4-8	4,200-4,700	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
59:								
Portino, stony surface	40	0-12	4,200-5,040	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
Trevino, stony surface	25	0-12	4,200-5,040	8-11	Plains	Lava plains	Mixed alluvium and/or loess over basalt	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
60:								
Portneuf, bedrock substratum	90	0-2	4,200-4,700	8-11	Plains	Lava plains	Silty alluvium, loess, and/or lacustrine deposits over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
61:								
Portneuf, bedrock substratum	90	2-4	4,200-4,700	8-11	Plains	Lava plains	Silty alluvium, loess, and/or lacustrine deposits over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
62:								
Portneuf, bedrock subatratum	90	4-8	4,200-4,700	8-11	Plains	Lava plains	Silty alluvium, loess, and/or lacustrine deposits over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
63:								
Portneuf	60	0-8	4,200-4,600	8-11	Plains	Lava plains	Silty alluvium, loess, and/or lacustrine deposits	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Quincy	30	4-20	4,200-4,600	8-11	Plains	Lava plains	Mixed eolian sand and/or sandy alluvium	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
64:								
Povey	55	30-60	5,200-8,600	16-24	Mountains	Mountain slopes	Colluvium over conglomerate, sandstone, siltstone, and/or quartzite	NORTH SLOPE LOAMY 16-22 ARTRV/FEID (R010AY008ID)
Dollarhide	25	30-60	5,200-8,600	16-24	Mountains	Mountain slopes	Colluvium over siltstone, conglomerate, sandstone, and/or quartzite	SHALLOW SUBALPINE 16+ ARART/FEID (R012XY025ID)
65:								
Quincy	50	2-4	3,200-4,500	8-12	Plains	Lava plains	Mixed eolian sand and/or sandy alluvium	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
Walco	35	4-12	3,200-4,500	8-12	Plains	Lava plains	Eolian deposits over basalt	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
66:								
Rehfield	75	1-6	4,400-4,800	10-13	Plains	Lava plains	Mixed alluvium and/or eolian deposits	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
67:								
Tenno, very stony surface	25	0-20	4,600-5,200	8-11	Plains	Lava plains	Loess over basalt	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
68:								
Tenno, very stony surface	25	20-60	4,600-5,140	8-11	Plains	Lava plains	Loess over basalt	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
69:								
Trevino, stony surface	25	0-20	4,200-5,150	8-11	Plains	Lava plains	Mixed alluvium and/or loess over basalt	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Portino, stony surface	15	0-20	4,200-5,150	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
70:								
Roundknoll	80	2-20	4,820-5,700	12-16	Lava plains	Volcanic cones	Volcanic ash and/or cinders	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
71:								
Soen	80	0-4	4,480-5,680	12-14	Plains	Lava plains	Mixed alluvium	LOAMY 8-12 ARTRW8/PSSPS (R012XY032ID)
72:								
Splittop	50	2-8	4,600-5,400	11-13	Plains	Lava plains	Eolian deposits over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Atomic	30	2-8	4,600-5,400	11-13	Plains	Lava plains	Mixed alluvium and/or loess over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
73:								
Starbuck	50	2-20	4,000-4,600	8-12	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
74:								
Starbuck	40	2-20	4,000-4,600	8-12	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	SHALLOW LOAMY 8-12 ARTRT/PSSPS (R011AY003ID)
McPan	30	2-10	4,000-4,600	8-12	Plains	Lava plains	Silty alluvium and/or loess over volcanic rock	LOAMY 8-12 ARTRW8/PSSPS-ACTH7 (R011XY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
75:								
Sunsetcone	85	30-60	5,840-6,200	16-18	Lava plains	Volcanic cones	Volcanic ash and/or cinders	MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)
76:								
Sunsetcone	50	30-60	5,970-7,120	16-20	Lava plains	Volcanic cones	Volcanic ash and/or cinders	MOUNTAIN LOAMY 22+ PSMEG/SYOR2 (R013XY017ID)
Grassycone	40	30-60	5,970-7,120	16-20	Mountains	Mountain slopes	Colluvium derived from volcanic ash and cinders with loess influence	QUAKING ASPEN 20+ POTR5 (R010AY016ID)
77:								
Taunton	50	2-15	4,000-4,600	8-12	Lava plains	Buttes	Mixed alluvium and/or eolian deposits over basalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Paulville	30	2-6	4,000-4,600	8-12	Lava plains	Buttes	Mixed alluvium, lacustrine deposits, and/or loess	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
78:								
Techick	40	0-4	5,000-5,690	11-13	Valleys	Fan remnants	Mixed alluvium	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
Soelberg	35	0-4	5,000-5,690	11-13	Valleys	Fan remnants	Mixed alluvium	GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
Lesbut	15	0-4	5,000-5,690	11-13	Valleys	Fan remnants	Mixed alluvium	GRAVELLY LOAM 8-12 ARTRW8/PSSPS (R012XY004ID)
79:								
Techicknot	45	0-12	4,800-5,800	9-12	Plains	Lava plains	Mixed alluvium	LOAMY 12-16 ARTRW8/PSSPS (R011BY010ID)
Atom	25	2-12	4,800-5,800	9-12	Plains	Lava plains	Mixed alluvium	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
79:								
Nargon	20	2-12	4,800-5,800	9-12	Plains	Lava plains	Mixed alluvium over basalt	LOAMY 8-12 ARTRW8/PSSPS (R011BY001ID)
80:								
Treemold	45	2-15	5,600-5,830	14-18	Lava plains	Lava fields	Volcanic ash and/or cinders over basalt	Very Shallow Loam 12-16 ARAR8/POSE (R010AY050ID)
Silentcone	35	2-15	5,600-5,830	14-18	Lava plains	Lava fields	Volcanic ash and/or cinders over basalt	SANDY LOAM 16-22 ARTRV/PSSPS (R013XY006ID)
81:								
Trevino, stony surface	40	0-20	4,200-5,110	8-11	Plains	Lava plains	Mixed alluvium and/or loess over basalt	SHALLOW LOAMY 8-12 ARAR8/PSSPS (R011BY013ID)
Portino, stony surface	30	0-20	4,200-5,110	8-11	Plains	Lava plains	Silty alluvium and/or loess over basalt	STONY LOAM 8-12 ARTRW8/PSSPS (R011BY003ID)
82:								
Vining	35	2-12	2,800-4,700	8-12	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Kecko	30	2-8	2,800-4,700	8-12	Plains	Lava plains	Mixed alluvium and/or eolian deposits	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)
83:								
Vining	40	0-12	4,200-5,070	8-11	Plains	Lava plains	Mixed alluvium and/or eolian deposits over basalt	LOAMY 8-12 ARTRT/PSSPS (R011AY009ID)
Wapi	20	0-12	4,200-5,070	8-11	Plains	Lava plains	Eolian sand over basalt	SANDY 8-14 ARTRT/HECOC8-ACHY (R011AY014ID)

Table 23.--Map Unit Setting, Parent Material, and Ecological Site--Continued

Map unit symbol and soil name	Pct. of map unit	Slope	Elevation	Mean annual precipi-tation	Landscape	Landform	Parent material	Ecological site name and number
	Pct	*Pct*	*Ft*	*In*				
84:								
Vitale----------	45	30-60	5,000-8,000	12-16	Mountains	Mountain slopes	Colluvium over sandstone, conglomerate, and/or siltstone	SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS (R010AY009ID)
Blackspar----------	35	30-60	5,000-8,000	12-16	Mountains	Mountain slopes	Colluvium over over siltstone, sandstone, and/or conglomerate	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS (R010AY007ID)

Table 24.--Engineering Soil Properties

(Absence of an entry indicates that data were not estimated. An asterisk denotes the representative USDA texture and Unified and AASHTO classification)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
1:												
Bancroft--------	0-6	*Silt loam	*CL	*A-6, A-4	0	0	100	100	97-100	89-94	29-37	9-13
	6-12	*Silt loam	*CL	*A-6, A-4	0	0	100	100	97-100	89-94	29-37	9-13
	12-15	*Silt loam, silty clay loam	*CL	*A-6, A-7	0	0	100	100	93-100	89-100	28-45	12-22
	15-26	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0	100	100	89-100	85-99	28-45	12-22
	26-48	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0	100	100	89-100	85-99	28-45	12-22
	48-60	*Silt loam, silty clay loam	*CL	*A-6, A-7	0	0	100	100	93-100	89-100	28-45	12-22
2:												
Bancroft--------	0-11	*Silt loam	*CL	*A-6, A-4	0	0	100	100	97-100	89-94	29-37	9-13
	11-40	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0	100	100	88-100	83-97	28-45	12-22
	40-80	*Gravelly loam, gravelly loamy sand	*CL-ML, CL, SM	*A-4, A-6	0	0-7	71-84	55-84	51-84	38-70	16-30	2-12
3:												
Bigcinder-------	0-2	*Ashy sandy loam	*SM	*A-4, A-2	0	0	100	79-100	58-77	35-48	0-27	NP-3
	2-6	*Very gravelly ashy sandy loam	*SM	*A-1	0	0-1	80-93	34-49	26-39	14-21	0-27	NP-3
	6-10	*Very gravelly ashy sandy loam	*GM	*A-1	0	0-1	55-59	42-52	31-41	15-21	0-21	NP-1
	10-20	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
	20-24	*Very gravelly ashy loamy sand	*GM, SM, GP-GM	*A-1	0	0-1	52-61	36-56	27-44	9-17	0-21	NP-3
	24-30	*Very gravelly ashy loamy sand	*GM, GP-GM	*A-1	0	0-1	52-61	36-56	28-45	11-20	0-19	NP-2
	30-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
3A:												
Bigcinder	0-2	*Ashy sandy loam	*SM	*A-4, A-2	0	0	100	79-100	58-77	35-48	0-27	NP-3
	2-6	*Very gravelly ashy sandy loam	*SM	*A-1	0	0-1	80-93	34-49	26-39	14-21	0-27	NP-3
	6-10	*Very gravelly ashy sandy loam	*GM	*A-1	0	0-1	55-59	42-52	31-41	15-21	0-21	NP-1
	10-20	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
	20-24	*Very gravelly ashy loamy sand	*GM, SM, GP-GM	*A-1	0	0-1	52-61	36-56	27-44	9-17	0-21	NP-3
	24-30	*Very gravelly ashy loamy sand	*GM, GP-GM	*A-1	0	0-1	52-61	36-56	28-45	11-20	0-19	NP-2
	30-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
4:												
Blackspar	0-7	*Very cobbly loam	*GC, GC-GM, SC	*A-4, A-6, A-2, A-1	0	28-46	38-71	35-70	29-65	20-48	22-35	6-13
	7-17	*Extremely cobbly loam, very cobbly loam, very cobbly clay loam	*GC	*A-2, A-7	0	26-42	29-57	26-55	22-53	16-40	30-41	13-21
	17-27	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
5:												
Bringmee	0-15	*Loam	*CL, ML, SC	*A-6, A-7, A-4	0	0	91-100	77-100	64-94	46-70	28-45	10-17
	15-34	*Clay loam, loam, sandy clay loam	*CL, SC	*A-6, A-7	0	0	78-89	63-89	52-87	39-68	32-47	13-25
	34-47	*Sandy clay loam	*SC, CL	*A-6, A-7	0	0	78-92	77-91	63-88	39-60	32-47	13-25
	47-61	*Gravelly sandy loam, very gravelly loamy coarse sand, very gravelly loamy sand	*SC-SM, SM, GC	*A-1, A-2	0	0	61-73	45-73	31-62	14-34	0-27	NP-10
Hutton	0-4	*Clay loam	*CL, CH	*A-7, A-6	0	0	95-100	84-100	72-96	56-77	39-53	17-25
	4-19	*Clay loam	*CH, CL	*A-7	0	0	95-100	84-100	72-97	55-78	42-58	19-28
	19-62	*Clay, silty clay, gravelly clay	*CH, GC	*A-7	0	0	69-91	68-91	56-91	48-83	51-72	29-44

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
6:												
Carey Lake------	0-12	*Loam	*CL, SC-SM	*A-4, A-6	0	0	89-100	74-100	62-91	44-66	26-35	7-12
	12-20	*Clay loam, silt loam, loam	*CL	*A-7, A-6	0	0	90-100	74-100	66-100	56-87	34-48	15-23
	20-47	*Fine sandy loam, loam, clay loam	*SC, CL	*A-6, A-4	0	0	90-100	75-100	64-99	36-61	26-39	9-19
	47-72	*Loam, fine sandy loam, very fine sandy loam	*CL, SC-SM	*A-4, A-6	0	0	77-100	76-100	64-92	45-66	20-30	6-12
7:												
Cinder land-----	0-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
Northcrater-----	0-4	*Very gravelly ashy loamy sand	*SM	*A-1	0	0	100	42-52	33-43	13-18	0-27	NP-3
	4-8	*Very gravelly ashy loamy sand	*SP-SM, SM	*A-1	0	0	100	28-47	22-38	9-16	0-27	NP-3
	8-12	*Extremely gravelly ashy loamy sand	*SP-SM	*A-1	0	0	100	22-31	17-25	7-11	0-23	NP-3
	12-20	*Very gravelly ashy loamy sand	*SM, SP-SM	*A-1	0	0	100	40-55	31-45	11-17	0-23	NP-3
	20-30	*Very gravelly ashy loamy sand	*SM, SP-SM	*A-1	0	0	100	36-50	27-41	9-15	0-21	NP-3
	30-60	*Very gravelly ashy loamy sand	*SP-SM, SM, SW-SM	*A-1	0	0	100	36-50	26-40	7-13	0-21	NP-3
8:												
Cox-------------	0-3	*Very stony sandy loam	*SC-SM, SC	*A-2, A-4	35-62	7-18	73-100	72-100	54-82	27-45	21-31	4-10
	3-12	*Very cobbly fine sandy loam, very stony sandy loam, extremely stony sandy loam	*SC, SC-SM	*A-2, A-4, A-6	13-28	27-45	66-89	65-88	57-85	25-41	21-31	6-12
	12-22	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rehfield--------	0-11	*Sandy loam	*SC-SM, SM	*A-2, A-4	0	0	90-100	71-100	51-78	22-36	17-26	1-6
	11-23	*Sandy loam	*SC, SC-SM	*A-4, A-2	0	0	95-100	90-100	67-78	34-40	23-28	7-10
	23-42	*Sandy clay loam, sandy loam, loam	*SC, CL	*A-6, A-7	0	0-4	100	90-100	72-93	36-53	29-42	12-22
	42-67	*Loamy sand, very fine sandy loam	*SC-SM, SC	*A-2	0	0	79-100	78-100	60-82	15-24	18-24	4-8
Rock outcrop----	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
9:												
Deerhorn	0-9	*Fine sandy loam	*SC, SC-SM	*A-4	0	0	100	100	90-95	40-45	22-33	6-10
	9-17	*Sandy clay loam, loam, sandy loam	*CL	*A-6, A-7	0	0	100	100	83-95	51-63	30-43	12-21
	17-21	*Loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	21-24	*Cemented material			---	---	---	---	---	---	---	---
	24-34	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rehfield	0-11	*Sandy loam	*SC-SM, SM	*A-2, A-4	0	0	90-100	71-100	51-78	22-36	17-26	1-6
	11-23	*Sandy loam	*SC, SC-SM	*A-4, A-2	0	0	95-100	90-100	67-78	34-40	23-28	7-10
	23-42	*Sandy clay loam, sandy loam, loam	*SC, CL	*A-6, A-7	0	0-4	100	90-100	72-93	36-53	29-42	12-22
	42-67	*Loamy sand, very fine sandy loam	*SC-SM, SC	*A-2	0	0	79-100	78-100	60-82	15-24	18-24	4-8
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
10:												
Deerhorn	0-9	*Fine sandy loam	*SC, SC-SM	*A-4,	0	0	100	100	90-95	40-45	22-33	6-10
	9-17	*Sandy clay loam, loam, sandy loam	*CL,	*A-6, A-7	0	0	100	100	83-95	51-63	30-43	12-21
	17-21	*Loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	21-24	*Cemented material			---	---	---	---	---	---	---	---
	24-34	*Unweathered bedrock			---	---	---	---	---	---	---	---
Wildors	0-10	*Very stony sandy loam	*SC, SC-SM	*A-2, A-4, A-6	24-42	5-18	55-98	53-98	39-78	19-41	22-32	6-11
	10-15	*Very stony loam, very stony sandy loam, extremely stony loam	*SC, GC-GM, CL	*A-4, A-2, A-6	12-41	8-17	58-89	56-89	45-83	30-59	18-32	4-13
	15-22	*Extremely stony loam, Extremely stony sandy loam, very stony loam	*GC, SC, GC-GM, CL	*A-4, A-2, A-6	12-47	8-17	58-89	56-89	45-83	30-59	18-32	4-13
	22-24	*Cemented material			---	---	---	---	---	---	---	---
	24-34	*Unweathered bedrock			---	---	---	---	---	---	---	---
11:												
Deerhorn	0-9	*Fine sandy loam	*SC, SC-SM	*A-4	0	0	100	100	90-95	40-45	22-33	6-10
	9-17	*Sandy clay loam, loam, sandy loam	*CL	*A-6, A-7	0	0	100	100	83-95	51-63	30-43	12-21
	17-21	*Loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	21-28	*Cemented material			---	---	---	---	---	---	---	---
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
11:												
Wildors	0-9	*Very stony sandy loam	*SC, SC-SM	*A-2, A-4, A-6	24-45	5-11	88-98	75-98	55-78	27-41	22-32	6-11
	9-15	*Extremely stony loam, very stony sandy loam, very stony loam	*GC, CL, GC-GM	*A-4, A-2, A-6	12-41	8-18	58-89	56-89	45-83	30-59	18-32	4-13
	15-21	*Extremely stony loam, Extremely stony sandy loam, very stony loam	*GC, SC, GC-GM, CL	*A-4, A-2, A-6	12-47	8-17	58-89	56-89	45-83	30-59	18-32	4-13
	21-24	*Cemented material			---	---	---	---	---	---	---	---
	24-34	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rekima	0-3	*Very stony fine sandy loam	*SC-SM, SC, GC-GM	*A-2, A-1	16-26	0-21	53-82	51-81	46-77	20-35	22-28	6-9
	3-15	*Very cobbly fine sandy loam, very stony fine sandy loam	*SC-SM, SC	*A-2, A-4	7-19	23-38	72-89	70-89	64-84	28-39	20-26	6-9
	15-18	*Very cobbly fine sandy loam, very stony fine sandy loam, very stony loam	*SC, GC-GM	*A-2, A-1, A-6	13-19	21-44	51-78	49-77	43-75	19-36	20-30	6-12
	18-19	*Cemented material			---	---	---	---	---	---	---	---
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
12:												
Deuce	0-2	*Stony silt loam	*CL	*A-6, A-4	8-16	0-8	89-96	89-96	79-95	65-80	27-39	9-17
	2-6	*Silt loam, clay loam, cobbly clay loam	*CL, GC	*A-6, A-4, A-7	3-13	0-26	65-90	63-90	55-90	47-79	26-41	10-21
	6-19	*Silt loam, stony clay loam, gravelly silty clay loam	*CL, GC	*A-6, A-7	3-13	7-24	63-100	62-100	55-100	46-89	30-45	12-23
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Nargon	0-5	*Silt loam	*CL	*A-6	0-5	5-10	94-100	87-100	79-97	66-82	29-39	12-17
	5-15	*Clay loam, silt loam	*CL, SC	*A-6, A-7	0	0-5	94-100	78-100	64-93	48-72	32-43	13-21
	15-22	*Stony loam, loam, gravelly silt loam	*CL, SC	*A-6	9-16	0-15	78-100	77-100	66-92	48-69	27-36	12-17
	22-32	*Unweathered bedrock			---	---	---	---	---	---	---	---
Lava flows	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
13:												
Drage, cool-----	0-14	*Gravelly loam	*GC, CL	*A-6, A-7, A-4	0	0	62-75	60-74	50-69	36-52	27-41	9-17
	14-30	*Very gravelly clay loam, very gravelly sandy clay loam	*GC	*A-2, A-7	0	4-21	38-69	35-68	31-64	24-50	38-47	19-25
	30-61	*Extremely gravelly sandy loam, extremely gravelly loam, extremely cobbly sandy loam	*GP-GC, GC	*A-2, A-1	0	13-22	23-53	19-51	13-43	6-23	20-36	6-17
14:												
Drage, cool-----	0-16	*Very gravelly loam	*GC, GC-GM	*A-2	0	0	37-51	34-49	28-47	20-35	24-41	7-17
	16-41	*Very gravelly clay loam, very gravelly sandy clay loam	*GC	*A-2, A-7	0	4-21	38-69	35-68	31-64	24-50	38-47	19-25
	41-61	*Extremely gravelly sandy loam, extremely gravelly loam, extremely cobbly sandy loam	*GP-GC, GC	*A-2, A-1	0	13-22	23-53	19-51	13-43	6-23	20-36	6-17
15:												
Echocrater------	0-3	*Gravelly ashy loamy sand	*SM	*A-2, A-1	0	0	100	58-77	45-62	16-24	0-26	NP-1
	3-8	*Gravelly ashy loamy sand	*SM	*A-1, A-2	0	0	100	58-77	45-62	16-24	0-26	NP-1
	8-15	*Very gravelly ashy loamy sand	*SP-SM, SM	*A-1	0	0	100	32-52	25-42	9-16	0-21	NP-1
	15-25	*Very gravelly ashy loamy sand	*SM, SP-SM	*A-1	0	0	100	40-55	31-44	11-17	0-19	NP-2
	25-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
16:												
Farmell---------	0-5	*Silt loam	*CL	*A-6	0	0	100	100	92-97	78-83	30-37	13-17
	5-8	*Silty clay loam	*CL	*A-7, A-6	0	0	100	100	92-100	80-94	33-48	13-24
	8-16	*Clay	*CH, MH	*A-7	0	0	100	100	85-100	72-87	53-78	29-42
	16-36	*Silty clay, silty clay loam, clay	*CH, CL	*A-7	0	0	100	100	92-100	88-100	45-61	25-37
	36-56	*Silty clay loam	*CL, CH	*A-7, A-6	0	0	100	100	91-100	80-95	35-50	17-29
	56-80	*Silty clay, silty clay loam	*CH, CL	*A-7	0	0	100	100	92-100	88-100	45-61	25-37

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
16:												
Power	0-10	*Silt loam	*CL	*A-6	0	0	100	100	97-100	90-94	29-36	12-15
	10-23	*Silt loam, silty clay loam, loam	*CL	*A-6, A-7	0	0	100	100	97-100	93-100	35-47	16-25
	23-40	*Silt loam	*CL	*A-6, A-7	0	0	89-100	89-100	79-100	66-89	30-45	12-23
	40-64	*Very fine sandy loam, loam, silt loam	*CL	*A-6, A-4	0	0	90-100	90-100	87-100	59-70	24-32	9-13
Playas	0-60	*Stratified silty clay loam to clay	*CH, MH, CL	*A-7	0	0	100	100	100	90-100	45-75	20-40
17:												
Goodalfs	0-3	*Medial silt loam	*ML	*A-4, A-6	0	0	100	100	88-98	71-81	23-38	3-11
	3-10	*Ashy silt loam	*ML, CL-ML	*A-4, A-6	0	0	100	100	87-97	67-77	25-39	4-12
	10-24	*Ashy silt loam	*CL	*A-6, A-7	0	0	100	100	92-98	81-87	31-42	12-17
	24-40	*Ashy silty clay loam	*CL	*A-7, A-6	0	0	100	100	97-100	90-96	39-49	18-23
	40-60	*Ashy silt loam	*CL	*A-6	0	0	100	100	92-98	80-86	32-40	13-18
Craters	0-4	*Very gravelly medial sandy loam	*SM	*A-1, A-2	0	0	100	39-61	29-48	15-26	0-27	NP-3
	4-10	*Very gravelly medial sandy loam	*SM, SP-SM	*A-1	0	0	100	30-49	22-39	12-21	17-27	1-4
	10-22	*Very gravelly medial sandy loam	*SC-SM, SM	*A-1, A-2	0	0	100	42-52	31-41	19-26	19-29	3-6
	22-38	*Gravelly medial sandy loam	*SC-SM, SC	*A-4, A-2	0	0	100	66-82	50-68	32-45	20-28	4-9
	38-60	*Gravelly medial sandy loam	*SC-SM	*A-4, A-2	0	0	100	66-82	51-65	33-43	21-26	6-7
18:												
Goodington	0-10	*Silt loam	*CL	*A-6, A-4, A-7	0	0	100	100	89-99	73-83	27-41	9-17
	10-26	*Silty clay, clay	*CH	*A-7	0	0	100	100	92-100	89-100	50-66	29-40
	26-56	*Silty clay loam, silt loam	*CL, CH	*A-7, A-6	0	0-14	100	94-100	86-100	75-95	35-50	17-29
	56-66	*Unweathered bedrock			---	---	---	---	---	---	---	---
Manard	0-11	*Stony silt loam	*CL, ML	*A-7, A-6	5-14	5-9	89-100	72-100	66-98	56-85	35-47	13-19
	11-20	*Silty clay, clay	*CH, CL	*A-7	0-5	0-5	100	100	94-100	90-100	49-61	29-37
	20-26	*Clay	*CH	*A-7	0	0	100	100	82-100	71-91	50-70	29-44
	26-28	*Cemented material			---	---	---	---	---	---	---	---
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
19:												
Hal----------	0-6	*Gravelly medial loam	*GC-GM, GM, GC	*A-4, A-2	0	0	42-63	40-62	38-62	29-49	20-31	3-10
	6-12	*Gravelly medial loam	*GC-GM, GM, GC	*A-4, A-2	0	0	42-63	40-62	38-62	29-49	18-27	3-10
	12-24	*Gravelly medial loam	*GC-GM, GM, CL	*A-4, A-2	0	0	45-66	43-65	41-65	31-52	18-27	3-10
	24-40	*Gravelly medial loam	*CL-ML, GM, CL	*A-4, A-2	0	0	48-68	46-67	44-67	33-54	18-27	3-10
	40-60	*Extremely gravelly ashy loamy coarse sand	*SP, SP-SC	*A-1	0	0	100	6-39	3-23	1-10	0-23	NP-6
Moonville-------	0-7	*Medial loam	*ML, OH	*A-5, A-4	0	0	76-100	74-100	72-100	54-81	27-59	3-9
	7-15	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	22-33	3-10
	15-31	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	22-33	3-10
	31-60	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	19-28	3-10
20:												
Howcan----------	0-4	*Loam	*ML, SC-SM	*A-6, A-4, A-7	2-5	0-8	78-96	77-96	62-91	43-68	25-47	6-17
	4-10	*Extremely cobbly loam, very cobbly loam	*GC, GP-GC	*A-2, A-1, A-7	0-15	15-47	23-57	19-55	16-52	11-39	22-41	6-17
	10-38	*Extremely stony loam, very stony loam	*GC, GP-GC	*A-2, A-6	14-45	10-30	21-58	17-56	15-52	11-39	30-39	13-17
	38-54	*Extremely stony sandy loam, extremely cobbly loam	*GC, GP-GC	*A-2	24-36	24-36	21-69	18-68	13-55	6-30	24-35	9-16
	54-64	*Unweathered bedrock			---	---	---	---	---	---	---	---
Zeebar----------	0-3	*Gravelly loam	*GC, CL	*A-6, A-7	0-4	0-4	64-83	63-83	53-77	39-57	31-42	11-18
	3-19	*Gravelly loam, very gravelly loam	*GC, CL	*A-6, A-2, A-7	0	0-8	52-80	50-79	43-75	31-56	29-41	12-19
	19-41	*Very gravelly clay loam, very gravelly sandy clay loam, gravelly clay loam	*GC	*A-2, A-6, A-7	0-6	0-13	40-71	37-70	31-65	23-50	30-41	13-21
	41-60	*Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly sandy clay loam	*GC	*A-2, A-6	0-5	7-27	40-57	22-57	18-53	13-40	24-36	9-17

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
20:												
Hutchley--------	0-4	*Gravelly loam	*GC, CL	*A-6, A-2	0-5	0-16	56-74	54-72	45-68	32-51	27-39	9-17
	4-11	*Very cobbly clay loam, very gravelly clay loam	*GC, CL	*A-7, A-2	0-5	8-31	50-80	47-80	41-76	32-59	38-49	19-25
	11-21	*Unweathered bedrock			---	---	---	---	---	---	---	---
21:												
Huddle----------	0-2	*Gravelly medial loam	*GC-GM, GM, CL	*A-4, A-2	0	0	47-67	44-66	42-66	32-53	20-31	3-10
	2-7	*Medial loam	*CL-ML, CL, GM	*A-4	0	0	69-87	68-87	65-87	49-69	20-31	3-10
	7-19	*Medial loam	*CL, CL-ML	*A-4, A-6	0	0	69-87	68-87	65-87	50-69	22-30	7-12
	19-39	*Medial loam	*CL, CL-ML	*A-4, A-6	0	0	76-87	75-87	73-87	56-69	22-30	7-12
	39-50	*Loam	*CL,	*A-6	0	0-21	74-87	73-87	69-87	56-74	29-39	12-19
	50-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Moonville-------	0-7	*Medial loam	*ML, OH	*A-5, A-4	0	0	76-100	74-100	72-100	54-81	27-59	3-9
	7-15	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	22-33	3-10
	15-31	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	22-33	3-10
	31-60	*Medial loam	*CL-ML, ML, CL	*A-4	0	0	76-100	74-100	72-100	54-81	19-28	3-10
22:												
Hutton----------	0-4	*Clay loam	*CL, CH	*A-7, A-6	0	0	95-100	84-100	72-96	56-77	39-53	17-25
	4-19	*Clay loam	*CH, CL	*A-7	0	0	95-100	84-100	72-97	55-78	42-58	19-28
	19-62	*Clay, silty clay, gravelly clay	*CH, GC	*A-7	0	0	69-91	68-91	56-91	48-83	51-72	29-44
23:												
Infernocone-----	0-5	*Gravelly ashy sandy loam	*SM	*A-2, A-1, A-4	0	0	100	55-75	40-57	24-36	0-27	NP-3
	5-10	*Gravelly ashy sandy loam	*SM	*A-2, A-1	0	0	100	58-70	42-54	25-34	0-27	NP-3
	10-25	*Gravelly ashy sandy loam	*SM	*A-2, A-1	0	0	100	58-77	44-61	23-34	0-21	NP-1
	25-35	*Very gravelly ashy sandy loam	*SM	*A-1	0	0	100	40-55	31-44	16-24	0-19	NP-2
	35-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
24:												
Infernocone	0-5	*Gravelly ashy sandy loam	*SM	*A-2, A-1, A-4	0	0	100	55-75	40-57	24-36	0-27	NP-3
	5-10	*Gravelly ashy sandy loam	*SM	*A-2, A-1	0	0	100	58-70	42-54	25-34	0-27	NP-3
	10-25	*Gravelly ashy sandy loam	*SM	*A-2, A-1	0	0	100	58-77	44-61	23-34	0-21	NP-1
	25-35	*Very gravelly ashy sandy loam	*SM	*A-1	0	0	100	40-55	31-44	16-24	0-19	NP-2
	35-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
25:												
Justesen	0-7	*Loam	*CL, CL-ML	*A-4, A-6	0	0	100	94-100	80-91	56-66	24-35	7-12
	7-24	*Clay loam, loam, silty clay loam	*CL	*A-7, A-6	0	0	100	94-100	80-96	60-75	34-48	16-24
	24-62	*Fine sandy loam, loam	*SC	*A-6, A-4, A-2	0	0	90-100	76-100	69-97	33-48	24-32	9-13
26:												
Justesen	0-7	*Loam	*CL, CL-ML	*A-4, A-6	0	0	100	94-100	80-91	56-66	24-35	7-12
	7-24	*Clay loam, loam, silty clay loam	*CL	*A-7, A-6	0	0	100	94-100	80-96	60-75	34-48	16-24
	24-62	*Fine sandy loam, loam	*SC	*A-6, A-4, A-2	0	0	90-100	76-100	69-97	33-48	24-32	9-13
27:												
Justesen	0-10	*Loam	*CL, CL-ML	*A-4, A-6	0	0	100	94-100	80-91	56-66	24-35	7-12
	10-25	*Loam, clay loam, silty clay loam	*CL	*A-6, A-7	0	0	100	84-100	73-98	55-77	34-48	16-24
	25-60	*Fine sandy loam, loam	*SC	*A-6, A-4, A-2	0	0	90-100	76-100	69-97	33-48	24-32	9-13
Drage	0-6	*Gravelly loam	*CL, GC	*A-6, A-7, A-2	3-7	5-37	58-81	56-81	48-76	35-58	29-41	12-19
	6-15	*Gravelly clay loam	*CL, GC	*A-7, A-6	0	5-15	58-90	56-89	49-85	38-67	39-49	19-25
	15-30	*Very cobbly clay loam	*GC, CL	*A-7, A-2	0-6	27-57	43-71	40-70	36-65	28-51	40-47	21-25
	30-43	*Extremely cobbly clay loam	*GC	*A-2	2-11	30-33	32-50	29-48	26-45	20-35	35-42	18-22
	43-60	*Extremely cobbly loam	*GC	*A-2	2-5	30-51	29-46	26-44	22-42	15-31	24-38	9-19
28:												
Lava flows	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
29:												
Lava flows------	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Cinderhurst-----	0-3	*Extremely cobbly medial silt loam	*GC, GM	*A-6, A-2, A-4	0	61-72	35-48	32-46	31-46	28-43	29-39	9-13
	3-8	*Very cobbly medial silt loam, very gravelly medial silt loam, extremely cobbly medial loam	*CL, GC	*A-6, A-2	0	50-59	25-80	22-79	21-79	19-76	29-39	12-17
	8-18	*Unweathered bedrock			---	---	---	---	---	---	---	---
30:												
Lava flows------	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Cinderhurst, extremely shallow--------	0-2	*Extremely cobbly medial silt loam	*GC, GM	*A-6, A-2, A-4	0	61-72	35-48	32-46	31-46	28-43	29-39	9-13
	2-12	*Unweathered bedrock			---	---	---	---	---	---	---	---
31:												
Lavacreek-------	0-10	*Very gravelly medial silt loam	*GC-GM, GM, GC	*A-2, A-1	0	0	32-37	29-34	28-34	24-32	20-33	3-10
	10-19	*Very cobbly medial loam, very gravelly medial loam, extremely cobbly medial loam	*GC-GM, GM, GC	*A-2, A-4, A-1	0	35-40	27-60	24-58	23-58	17-47	20-31	3-10
	19-36	*Extremely cobbly medial loam, very gravelly medial loam, very cobbly medial loam	*GC-GM, GM, GC	*A-1, A-4	0	36-50	32-55	29-53	28-53	21-43	20-31	3-10
	36-42	*Extremely cobbly medial sandy loam, very gravelly medial loam, extremely gravelly medial loam	*GC-GM, GP-GM	*A-1	0	35-50	22-58	19-56	14-44	7-23	18-24	3-6
	42-59	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-48	19-58	15-56	11-44	5-23	18-24	3-6
	59-69	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
31:												
Dollarhide------	0-8	*Very gravelly silt loam	*GC, GM, GC-GM	*A-2, A-1, A-6	0	14-21	31-56	28-54	24-52	19-43	21-35	4-12
	8-13	*Very gravelly loam, extremely cobbly fine sandy loam, very cobbly loam	*GC, GC-GM	*A-2, A-1	0	18-33	23-52	20-50	16-46	11-33	20-31	4-12
	13-23	*Unweathered bedrock			---	---	---	---	---	---	---	---
32:												
Lavacreek-------	0-10	*Very gravelly medial silt loam	*GC-GM, GM, GC	*A-2, A-1	0	0	32-37	29-34	28-34	24-32	20-33	3-10
	10-19	*Very cobbly medial loam, very gravelly medial loam, extremely cobbly medial loam	*GC-GM, GM, GC	*A-2, A-4, A-1	0	35-40	27-60	24-58	23-58	17-47	20-31	3-10
	19-36	*Extremely cobbly medial loam, very gravelly medial loam, very cobbly medial loam	*GC-GM, GM, GC	*A-1, A-4	0	36-50	32-55	29-53	28-53	21-43	20-31	3-10
	36-42	*Extremely cobbly medial sandy loam, very gravelly medial loam, extremely gravelly medial loam	*GC-GM, GP-GM	*A-1	0	35-50	22-58	19-56	14-44	7-23	18-24	3-6
	42-59	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-48	19-58	15-56	11-44	5-23	18-24	3-6
	59-69	*Unweathered bedrock			---	---	---	---	---	---	---	---
Dollarhide------	0-7	*Very gravelly silt loam	*GC, GM, GC-GM	*A-2, A-1, A-6	0	14-21	31-56	28-54	24-52	19-43	21-35	4-12
	7-13	*Very gravelly loam, extremely cobbly fine sandy loam, very cobbly loam	*GC, GC-GM	*A-2, A-1	0	18-33	23-52	20-50	16-46	11-33	20-31	4-12
	13-23	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
33:												
Lavacreek, cold	0-10	*Very gravelly medial silt loam	*GC-GM, GM, GC	*A-2, A-1	0	0	32-37	29-34	28-34	24-32	20-33	3-10
	10-19	*Very cobbly medial loam, very gravelly medial loam, extremely cobbly loam	*GC-GM, GM, GC	*A-2, A-4, A-1	0	35-40	27-60	24-58	23-58	17-47	20-31	3-10
	19-36	*Extremely cobbly medial loam, very gravelly loam, very cobbly loam	*GC-GM, GM, GC	*A-1, A-4	0	36-50	32-55	29-53	28-53	21-43	20-31	3-10
	36-42	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-50	22-58	19-56	14-44	7-23	18-24	3-6
	42-59	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-48	19-58	15-56	11-44	5-23	18-24	3-6
	59-69	*Unweathered bedrock			---	---	---	---	---	---	---	---
Dollarhide, cold	0-7	*Very gravelly silt loam	*GC, GM, GC-GM	*A-2, A-1, A-6	0	14-21	31-56	28-54	24-52	19-43	21-35	4-12
	7-13	*Very gravelly loam, extremely cobbly fine sandy loam, very cobbly loam	*GC, GC-GM	*A-2, A-1	0	18-33	23-52	20-50	16-46	11-33	20-31	4-12
	13-23	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
34:												
Lavacreek-------	0-10	*Very gravelly medial silt loam	*GC-GM, GM, GC	*A-2, A-1	0	0	32-37	29-34	28-34	24-32	20-33	3-10
	10-19	*Very cobbly medial loam, very gravelly medial loam, extremely cobbly loam	*GC-GM, GM, GC	*A-2, A-4, A-1	0	35-40	27-60	24-58	23-58	17-47	20-31	3-10
	19-36	*Extremely cobbly medial loam, very gravelly loam, very cobbly loam	*GC-GM, GM, GC	*A-1, A-4	0	36-50	32-55	29-53	28-53	21-43	20-31	3-10
	36-42	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-50	22-58	19-56	14-44	7-23	18-24	3-6
	42-59	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-48	19-58	15-56	11-44	5-23	18-24	3-6
	59-69	*Unweathered bedrock			---	---	---	---	---	---	---	---
Dollarhide------	0-8	*Very gravelly silt loam	*GC, GM, GC-GM	*A-2, A-1, A-6	0	14-21	31-56	28-54	24-52	19-43	21-35	4-12
	8-13	*Very gravelly loam, extremely cobbly fine sandy loam, very cobbly loam	*GC, GC-GM	*A-2, A-1	0	18-33	23-52	20-50	16-46	11-33	20-31	4-12
	13-23	*Unweathered bedrock			---	---	---	---	---	---	---	---
Grassycone------	0-1	*Slightly decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	1-3	*Medial fine sandy loam	*SM,	*A-4, A-2	0	0	73-100	72-100	62-90	31-47	0-32	NP-3
	3-9	*Gravelly medial fine sandy loam, very gravelly medial fine sandy loam, medial fine sandy loam	*GM, SM	*A-2, A-1	0	0	37-73	34-72	30-64	15-33	17-27	1-3
	9-57	*Gravelly medial fine sandy loam	*GC-GM, GM	*A-1, A-2	0	0-4	46-63	44-62	39-57	17-26	17-26	3-6
	57-65	*Very cobbly loam, cobbly clay loam	*GC, CL	*A-6	0	39-52	50-75	48-73	47-73	38-63	32-40	16-21

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
35:												
Lavacreek-------	0-10	*Very gravelly medial silt loam	*GC-GM, GM, GC	*A-2, A-1	0	0	32-37	29-34	28-34	24-32	20-33	3-10
	10-19	*Very cobbly medial loam, very gravelly medial loam, extremely cobbly loam	*GC-GM, GM, GC	*A-2, A-4, A-1	0	35-40	27-60	24-58	23-58	17-47	20-31	3-10
	19-36	*Extremely cobbly medial loam, very gravelly loam, very cobbly loam	*GC-GM, GM, GC	*A-1, A-4	0	36-50	32-55	29-53	28-53	21-43	20-31	3-10
	36-42	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-50	22-58	19-56	14-44	7-23	18-24	3-6
	42-59	*Extremely cobbly sandy loam, very gravelly loam, extremely gravelly loam	*GC-GM, GP-GM	*A-1	0	35-48	19-58	15-56	11-44	5-23	18-24	3-6
	59-69	*Unweathered bedrock			---	---	---	---	---	---	---	---
Vitale----------	0-3	*Very cobbly loam	*GC, GC-GM	*A-2, A-7	2-6	21-42	44-71	42-69	34-66	24-49	24-41	7-17
	3-10	*Very cobbly loam, very gravelly clay loam, very cobbly clay loam	*GC, CL	*A-6, A-2, A-7	1-6	21-41	45-72	43-70	38-67	29-51	36-47	16-21
	10-19	*Very cobbly clay loam, very gravelly clay loam, very cobbly loam	*GC, CH	*A-7, A-2	1-6	12-54	38-73	35-72	30-69	24-55	37-51	17-25
	19-24	*Very cobbly clay loam, very gravelly clay loam, very cobbly loam	*GC, CH	*A-7, A-2	1-6	12-54	38-73	35-72	30-69	24-55	37-51	17-25
	24-33	*Very cobbly loam, very gravelly loam	*GC	*A-6, A-2	1-6	12-54	39-73	36-72	31-67	22-50	27-37	12-17
	33-43	*Unweathered bedrock			---	---	---	---	---	---	---	---
36:												
McBiggam--------	0-3	*Silt loam	*CL, CL-ML	*A-4	0	0	90-100	74-100	72-100	65-93	22-31	6-10
	3-10	*Silt loam	*CL, CL-ML	*A-4	0	0	90-100	74-100	72-100	65-93	22-31	6-10
	10-15	*Silt loam, silty clay loam	*CL	*A-6, A-7	0	0-10	94-100	88-100	84-100	81-100	33-45	15-23
	15-26	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0-10	94-100	88-100	83-100	79-99	33-45	15-23
	26-36	*Silty clay	*CH, CL	*A-7	0	0	100	94-100	89-100	85-100	49-62	29-36
	36-46	*Silty clay	*CH, CL	*A-7	0	0	100	94-100	89-100	85-100	49-62	29-36
	46-80	*Silty clay loam, clay loam	*CL, CH	*A-7, A-6	0	0	100	94-100	90-100	86-100	39-50	21-29

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
37:												
McCarey	0-11	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	11-18	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-28	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---
Beartrap	0-16	*Loam	*CL-ML, ML, SC-SM	*A-4	0	0-10	94-100	82-100	70-89	49-63	21-30	4-7
	16-52	*Fine sandy loam, silt loam, loam	*SC, CL, SC-SM	*A-4, A-6	0	0-18	94-100	82-100	74-97	37-51	23-31	7-12
	52-62	*Unweathered bedrock			---	---	---	---	---	---	---	---
38:												
McCarey	0-11	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	11-18	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-28	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---
Beartrap	0-16	*Loam	*CL-ML, ML, SC-SM	*A-4	0	0-10	94-100	82-100	70-89	49-63	21-30	4-7
	16-52	*Fine sandy loam, silt loam, loam	*SC, SC-SM, CL	*A-4, A-6	0	0-18	94-100	82-100	74-97	37-51	23-31	7-12
	52-62	*Unweathered bedrock			---	---	---	---	---	---	---	---
39:												
McCarey	0-11	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	11-18	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-28	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---
Beartrap	0-16	*Loam	*CL-ML, ML, SC-SM	*A-4	0	0-10	94-100	82-100	70-89	49-63	21-30	4-7
	16-52	*Fine sandy loam, silt loam, loam	*SC, SC-SM, CL	*A-4, A-6	0	0-18	94-100	82-100	74-97	37-51	23-31	7-12
	52-62	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
40:												
McCarey	0-10	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	10-22	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	22-37	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	37-47	*Unweathered bedrock			---	---	---	---	---	---	---	---
Justesen	0-14	*Loam	*CL, CL-ML	*A-4, A-6	0	0	100	94-100	80-91	56-66	24-35	7-12
	14-31	*Clay loam, loam, silty clay loam	*CL	*A-7, A-6	0	0	100	94-100	80-96	60-75	34-48	16-24
	31-64	*Loam, Fine sandy loam	*SC, CL	*A-6, A-4	0	0	90-100	76-100	63-88	41-60	24-32	9-13
41:												
McCarey	0-10	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	10-22	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	22-37	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	37-47	*Unweathered bedrock			---	---	---	---	---	---	---	---
Molyneux	0-13	*Loam	*CL, SC-SM	*A-4, A-6	0	0	84-100	83-100	68-93	48-68	22-37	6-13
	13-50	*Clay loam, silt loam, loam	*CL, SC	*A-7, A-6	0	0	85-95	75-95	68-91	50-73	37-49	17-25
	50-75	*Gravelly sandy clay loam, gravelly clay loam	*SC, CL	*A-6, A-2, A-7	0	0-4	75-87	55-87	46-81	29-54	32-43	13-21
42:												
McCarey	0-11	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	11-18	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-28	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---
Molyneux	0-13	*Loam	*CL, SC-SM	*A-4, A-6	0	0	95-100	84-100	70-93	49-68	22-37	6-13
	13-62	*Loam, clay loam, silt loam	*CL, SC	*A-6, A-7	0	0	85-95	75-95	68-95	50-78	37-49	17-25
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
43:												
McCarey	0-10	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	10-22	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	22-37	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	37-47	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
43:												
Pedleford	0-5	*Very stony loam	*CL, GC-GM	*A-4, A-2	29-43	7-13	61-89	58-88	49-80	34-57	22-31	6-10
	5-13	*Very stony loam, very stony sandy loam, very cobbly loam	*CL, GC	*A-4, A-6	27-43	6-37	65-89	63-88	55-82	42-64	24-34	8-13
	13-29	*Very stony silt loam, very stony loam, very cobbly loam	*CL, CL-ML	*A-4	20-44	21-44	72-88	70-87	63-83	51-68	20-28	6-10
	29-33	*Very cobbly loam	*SC, GC-GM, GC	*A-4, A-1	0	26-48	56-73	41-73	35-65	24-46	22-28	6-10
	33-43	*Unweathered bedrock			---	---	---	---	---	---	---	---
44:												
McCarey	0-11	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	11-18	*Clay loam, silty clay loam, silt loam	*CL,	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-28	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	28-38	*Unweathered bedrock			---	---	---	---	---	---	---	---
Pedleford	0-6	*Very stony loam	*CL, GC-GM	*A-4, A-2	29-43	7-13	61-89	58-88	49-80	34-57	22-31	6-10
	6-26	*Very stony loam, very stony sandy loam, very cobbly loam	*CL, GC	*A-4, A-6	27-43	6-37	65-89	63-88	55-82	42-64	24-34	8-13
	26-34	*Very stony silt loam, very stony loam, very cobbly loam	*CL, CL-ML	*A-4	20-44	21-44	72-88	70-87	63-83	51-68	20-28	6-10
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
45:												
McCarey	0-5	*Loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	69-93	48-68	22-37	6-13
	5-22	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	22-35	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	35-45	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
46:												
McCarey	0-12	*Silt loam	*CL, SC-SM	*A-4, A-6	0	0-5	95-100	84-100	74-98	59-80	22-37	6-13
	12-18	*Clay loam, silty clay loam, silt loam	*CL	*A-7, A-6	0	0-5	85-100	85-100	71-98	54-78	33-48	13-24
	18-33	*Loam, silt loam	*CL, SC	*A-6, A-4	0	0-4	86-100	71-100	61-95	46-74	24-37	9-17
	33-43	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
46:												
Splittop	0-4	*Loam	*CL	*A-6	0	0-5	94-100	88-100	85-100	67-83	29-39	12-17
	4-30	*Loam, silt loam	*CL	*A-6	0	0-5	94-100	88-100	85-100	68-84	30-39	13-19
	30-40	*Unweathered bedrock			---	---	---	---	---	---	---	---
Lava flows	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
47:												
McPan	0-6	*Silt loam	*CL	*A-6	0	0-10	94-100	88-100	84-100	78-96	29-39	12-17
	6-20	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0-15	94-100	88-100	83-100	78-97	35-45	16-23
	20-27	*Cobbly loam, loam, silt loam	*CL	*A-6	0	0-21	94-100	82-100	79-100	64-84	29-37	13-18
	27-29	*Cemented material			---	---	---	---	---	---	---	---
	29-39	*Unweathered bedrock			---	---	---	---	---	---	---	---
Chijer	0-6	*Very fine sandy loam	*CL, SC-SM	*A-4, A-6	0	0	95-100	84-100	79-100	46-64	20-31	4-12
	6-11	*Loam, silt loam, very fine sandy loam	*CL, CL-ML	*A-4, A-6	0	0	95-100	85-100	80-100	60-81	18-30	4-12
	11-61	*Very fine sandy loam, silt loam, loam	*CL-ML, CL, SC-SM	*A-4	0	0-9	95-100	79-100	75-100	45-62	18-26	4-8
48:												
Molyneux	0-13	*Loam	*CL, SC-SM	*A-4, A-6	0	0	95-100	84-100	70-93	49-68	22-37	6-13
	13-50	*Clay loam, silt loam, loam	*CL, SC	*A-7, A-6	0	0	85-95	75-95	68-91	50-73	37-49	17-25
	50-75	*Gravelly sandy clay loam, gravelly clay loam	*SC, CL	*A-6, A-2, A-7	0	0-4	75-87	55-87	46-81	29-54	32-43	13-21
49:												
Nargon	0-5	*Loam	*CL, SC	*A-6,	3-5	3-10	94-100	78-100	66-93	48-69	28-39	11-17
	5-15	*Clay loam, silt loam	*CL, SC	*A-6, A-7	0	0-5	94-100	78-100	64-93	48-72	32-43	13-21
	15-22	*Stony loam, loam, gravelly silt loam	*CL, SC	*A-6	9-16	0-15	78-100	77-100	66-92	48-69	27-36	12-17
	22-32	*Unweathered bedrock			---	---	---	---	---	---	---	---
Atom	0-3	*Silt loam	*CL	*A-6, A-7	0	0	90-100	90-100	86-100	81-99	31-42	12-19
	3-10	*Silty clay loam, clay loam, silt loam, loam	*CL	*A-7, A-6	0	0	90-100	90-100	77-100	73-98	30-47	12-25
	10-60	*Silt loam, silty clay loam, clay loam, loam	*CL	*A-6, A-7	0	0	91-100	90-100	89-100	85-100	35-46	17-25

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
49:												
Techicknot------	0-4	*Loam	*CL	*A-6	0	0	90-100	90-100	79-92	58-69	31-39	13-17
	4-29	*Clay loam, loam, silty clay loam	*CL	*A-7, A-6	0	0	83-100	82-100	71-95	54-74	37-48	17-24
	29-48	*Loam, silt loam, clay loam, silty clay loam	*CL	*A-6, A-7	0	0	78-100	77-100	67-99	51-79	33-46	15-24
	48-60	*Silt loam, loam, silty clay loam, clay loam	*CL	*A-6	0	0	78-100	77-100	69-100	59-87	29-40	13-21
50:												
Nargon----------	0-2	*Silt loam	*CL	*A-6	0-5	5-10	94-100	87-100	79-97	66-82	29-39	12-17
	2-7	*Clay loam, silt loam	*CL, SC	*A-6, A-7	0	0-5	94-100	78-100	64-93	48-72	32-43	13-21
	7-11	*Loam	*CL	*A-6, A-7	0	0	100	100	82-99	60-77	27-44	12-25
	11-21	*Stony loam, loam, gravelly silt loam	*CL, SC	*A-6	9-16	0-15	78-100	77-100	66-92	48-69	27-36	12-17
	21-31	*Unweathered bedrock			---	---	---	---	---	---	---	---
Deuce----------	0-2	*Stony silt loam	*CL	*A-6, A-4	8-16	0-8	89-96	89-96	79-95	65-80	27-39	9-17
	2-6	*Silt loam, clay loam, cobbly clay loam	*CL, GC	*A-6, A-4, A-7	3-13	0-26	65-90	63-90	55-90	47-79	26-41	10-21
	6-19	*Silt loam, stony clay loam, gravelly silty clay loam	*CL, GC	*A-6, A-7	3-13	7-24	63-100	62-100	55-100	46-89	30-45	12-23
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Lava flows------	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
51:												
Neeley----------	0-10	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	95-100	82-91	18-32	2-9
	10-16	*Silt loam	*CL-ML, ML, CL	*A-4, A-6	0	0	100	100	93-100	81-93	19-33	3-12
	16-60	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	95-100	82-90	17-28	3-9
Hodad----------	0-7	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-5	94-100	88-100	83-100	75-96	21-35	4-12
	7-17	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-5	94-100	88-100	83-100	75-96	21-35	4-12
	17-36	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-5	94-100	88-100	83-100	75-96	18-30	4-12
	36-46	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
52:												
Pagari	0-11	*Very cobbly sandy loam	*SC, SC-SM	*A-2, A-1, A-4	0-7	35-45	81-98	63-98	46-77	22-40	22-31	6-10
	11-17	*Very cobbly sandy loam, very cobbly loam	*SC, SC-SM	*A-2, A-1, A-4, A-6	0-7	35-45	87-98	63-98	46-78	22-41	20-29	6-11
	17-31	*Extremely cobbly loam, extremely cobbly sandy clay loam, extremely cobbly clay loam	*GC, CL	*A-6, A-2, A-7	10-15	35-55	53-86	51-85	43-82	31-63	29-42	12-21
	31-46	*Extremely cobbly loam, extremely cobbly sandy loam, extremely cobbly sandy clay loam	*GC	*A-6, A-2	10-18	16-50	50-71	48-70	39-65	27-47	24-36	9-17
	46-56	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rehfield	0-10	*Loamy sand	*SC-SM, SM	*A-2	0	0	90-100	71-100	55-83	14-26	17-26	1-6
	10-42	*Sandy clay loam, sandy loam, loam	*SC, CL	*A-6, A-7	0	0-4	100	90-100	72-93	36-53	29-44	12-22
	42-67	*Loamy sand, very fine sandy loam	*SC-SM, SC	*A-2	0	0	79-100	78-100	60-82	15-24	18-24	4-8
53:												
Paulville	0-6	*Loam	*CL	*A-6, A-4	0	0	94-100	88-100	75-93	54-69	27-38	10-16
	6-30	*Clay loam, silty clay loam, silt loam	*CL	*A-6, A-7	0	0	100	100	84-97	73-86	29-43	12-22
	30-50	*Silt loam, very fine sandy loam, loam	*CL, CL-ML	*A-4	0	0	100	100	89-94	70-75	20-27	6-10
	50-64	*Loamy fine sand, sandy loam, loam	*SC-SM, SM	*A-2, A-4	0	0	100	100	92-97	31-36	16-23	2-6
McPan	0-6	*Silt loam	*CL	*A-6	0	0-10	94-100	88-100	84-100	78-96	29-39	12-17
	6-20	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0-15	94-100	88-100	83-100	78-97	35-45	16-23
	20-27	*Cobbly loam, loam, silt loam	*CL	*A-6	0	0-21	94-100	82-100	79-100	64-84	29-37	13-18
	27-29	*Cemented material			---	---	---	---	---	---	---	---
	29-39	*Unweathered bedrock			---	---	---	---	---	---	---	---
Starbuck	0-4	*Very fine sandy loam	*CL, CL-ML, SC-SM	*A-4	0	0-5	100	89-100	86-100	49-61	22-29	6-10
	4-17	*Very fine sandy loam, silt loam, loam	*CL	*A-4, A-6	0	0-5	100	89-100	86-100	52-62	24-30	9-12
	17-27	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
54:												
Playas	0-60	*Stratified silty clay loam to clay	*CH, MH, CL	*A-7	0	0	100	100	100	90-100	45-75	20-40
55:												
Portino	0-12	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
56:												
Portino	0-12	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
57:												
Portino, stony surface	0-12	*Cobbly loam	*CL, CL-ML	*A-4, A-6	0	9-23	84-100	84-100	79-100	60-81	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-9	90-100	89-100	84-100	76-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
58:												
Portino, stony surface	0-12	*Cobbly loam	*CL, CL-ML	*A-4, A-6	0	9-23	84-100	84-100	79-100	60-81	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-9	90-100	89-100	84-100	76-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
59:												
Portino, stony surface	0-12	*Cobbly loam	*CL, CL-ML	*A-4, A-6	0	9-23	84-100	84-100	79-100	60-81	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-9	90-100	89-100	84-100	76-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
Trevino, stony surface	0-6	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	6-12	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	12-19	*Stony loam, loam, silt loam	*CL, SC-SM	*A-4, A-6	0-20	0-4	84-100	69-100	58-91	41-66	23-31	7-12
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
60:												
Portneuf, bedrock substratum-----	0-15	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	21-33	4-12
	15-57	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	96-100	83-90	17-27	3-8
	57-67	*Unweathered bedrock			---	---	---	---	---	---	---	---
61:												
Portneuf, bedrock substratum-----	0-15	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	21-33	4-12
	15-57	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	96-100	83-90	17-27	3-8
	57-67	*Unweathered bedrock			---	---	---	---	---	---	---	---
62:												
Portneuf, bedrock substratum-----	0-15	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0	100	100	94-100	86-96	21-33	4-12
	15-57	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	96-100	83-90	17-27	3-8
	57-67	*Unweathered bedrock			---	---	---	---	---	---	---	---
63:												
Portneuf--------	0-10	*Fine sandy loam	*SC-SM, SM, CL	*A-4	0	0	100	100	87-97	41-51	17-28	2-10
	10-34	*Silt loam	*CL-ML, ML, CL	*A-4	0	0	100	100	96-100	83-90	18-27	3-8
	34-60	*Silt loam	*CL-ML, ML	*A-4	0	0	100	100	96-100	83-90	16-25	2-7
Quincy----------	0-10	*Fine sand	*SP-SM, SM	*A-2, A-3	0	0	100	100	92-97	10-15	0-21	NP-3
	10-60	*Fine sand, loamy fine sand, sand	*SM, SC-SM	*A-2	0	0	100	100	92-98	15-21	0-20	NP-4

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
64:												
Povey	0-14	*Gravelly loam	*GC, GC-GM	*A-4, A-6, A-1	0	0	46-75	42-74	35-68	24-50	25-37	6-13
	14-35	*Very gravelly loam, very cobbly loam, extremely gravelly fine sandy loam	*GC, GP-GC	*A-2, A-1, A-6	0	14-34	26-58	21-56	18-52	12-38	22-35	6-13
	35-60	*Extremely cobbly loam, very cobbly loam, extremely cobbly sandy loam	*GC-GM, GC	*A-2, A-1, A-4	0	52-66	32-73	29-72	24-65	17-47	20-31	4-10
	60-70	*Unweathered bedrock			---	---	---	---	---	---	---	---
Dollarhide	0-7	*Very gravelly silt loam	*GC, GM, GC-GM	*A-2, A-1, A-6	0	14-21	31-56	28-54	24-52	19-43	21-35	4-12
	7-13	*Very gravelly loam, extremely cobbly fine sandy loam, very cobbly loam	*GC, GC-GM	*A-2, A-1	0	18-33	23-52	20-50	16-46	11-33	20-31	4-12
	13-23	*Unweathered bedrock			---	---	---	---	---	---	---	---
65:												
Quincy	0-24	*Fine sand	*SP-SM, SM	*A-2, A-3	0	0	100	100	92-97	10-15	0-21	NP-3
	24-69	*Loamy fine sand, fine sand, sand	*SM, SC-SM	*A-2	0	0	100	100	92-98	32-38	0-22	NP-4
Walco	0-13	*Fine sand	*SP-SM, SM	*A-3, A-2	0	0	92-100	92-100	84-97	8-14	0-20	NP-2
	13-21	*Loamy fine sand, loamy sand, fine sand	*SM	*A-2, A-4	0	0-8	92-100	91-100	84-97	29-36	0-19	NP-2
	21-31	*Unweathered bedrock			---	---	---	---	---	---	---	---
66:												
Rehfield	0-12	*Loamy sand	*SC-SM, SM	*A-2	0	0	90-100	71-100	55-83	14-26	17-26	1-6
	12-40	*Sandy clay loam, sandy loam, loam	*SC, CL	*A-6, A-7	0	0-4	100	90-100	72-93	36-53	29-44	12-22
	40-61	*Loamy sand, very fine sandy loam	*SC-SM, SC	*A-2	0	0	79-100	78-100	60-82	15-24	18-24	4-8
67:												
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
67:												
Tenno, very stony surface--	0-8	*Loam	*CL, SC-SM	*A-4, A-6	0-2	0-2	82-100	81-100	67-92	46-67	20-31	4-12
	8-14	*Loam, stony loam	*CL, SC-SM	*A-4, A-6	0-10	0-9	79-96	78-96	65-89	45-64	20-31	4-12
	14-17	*Stony loam	*CL, GC-GM	*A-4, A-6	5-10	8-14	66-96	64-95	53-88	37-64	20-31	4-12
	17-27	*Unweathered bedrock			---	---	---	---	---	---	---	---
68:												
Rock outcrop----	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Tenno, very stony surface--	0-8	*Loam	*CL, SC-SM	*A-4, A-6	0-2	0-2	82-100	81-100	67-92	46-67	20-31	4-12
	8-14	*Loam, stony loam	*CL, SC-SM	*A-4, A-6	0-10	0-9	79-96	78-96	65-89	45-64	20-31	4-12
	14-17	*Stony loam	*CL, GC-GM	*A-4, A-6	5-10	8-14	66-96	64-95	53-88	37-64	20-31	4-12
	17-27	*Unweathered bedrock			---	---	---	---	---	---	---	---
69:												
Rock outcrop----	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Trevino, stony surface--------	0-6	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	6-12	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	12-19	*Stony loam, loam, silt loam	*CL, SC-SM	*A-4, A-6	0-20	0-4	84-100	69-100	58-91	41-66	23-31	7-12
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Portino, stony surface--------	0-12	*Cobbly loam	*CL, CL-ML	*A-4, A-6	0	9-23	84-100	84-100	79-100	60-81	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-9	90-100	89-100	84-100	76-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
70:												
Roundknoll------	0-3	*Gravelly ashy loamy sand	*SM	*A-2, A-1	0	0	100	64-77	49-62	18-24	0-26	NP-1
	3-10	*Gravelly ashy loamy sand	*SM	*A-1, A-2	0	0	100	58-70	45-56	16-22	0-26	NP-1
	10-15	*Extremely gravelly ashy loamy sand	*SP-SM, SM	*A-1	0	0	100	25-42	19-33	7-13	0-24	NP-1
	15-20	*Very gravelly ashy loamy sand	*SM, SP-SM	*A-1	0	0	100	36-50	27-40	10-15	0-24	NP-1
	20-30	*Extremely gravelly ashy loamy sand	*SP-SM, SM	*A-1	0	0	100	32-45	25-36	9-14	0-19	NP-2
	30-60	*Extremely gravelly ashy sand	*SP	*A-1	0	0	100	13-26	10-21	2-4	0-14	NP

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
71:												
Soen	0-7	*Clay loam	*CL, CH, SC	*A-7, A-6	0	0-9	89-100	74-100	64-94	49-74	39-51	19-25
	7-22	*Silty clay loam, clay, silty clay	*CH, CL	*A-7	0	0-4	95-100	85-100	80-100	77-100	46-62	25-36
	22-60	*Silt loam, sandy loam, gravelly loam	*CL	*A-6, A-4	0	0	71-100	69-100	62-99	51-83	26-38	10-18
72:												
Splittop	0-3	*Loam	*CL	*A-6	0	0-5	94-100	88-100	85-100	64-80	29-39	12-17
	3-26	*Silt loam, loam	*CL	*A-6	0	0	94-100	88-100	85-100	75-92	30-39	13-19
	26-32	*Loam, silt loam	*CL	*A-6	0	0-5	94-100	88-100	85-100	68-84	30-39	13-19
	32-42	*Unweathered bedrock			---	---	---	---	---	---	---	---
Atomic	0-15	*Loam	*CL	*A-6, A-7	0	0	100	94-100	80-94	59-71	31-42	12-19
	15-34	*Loam, silt loam	*CL, SC	*A-6	0	0-9	89-100	73-100	62-94	45-71	30-40	12-19
	34-46	*Cobbly loam, cobbly silt loam, gravelly loam	*CL, GC	*A-6	0	18-23	61-90	59-90	51-85	37-64	29-39	12-19
	46-56	*Unweathered bedrock			---	---	---	---	---	---	---	---
73:												
Starbuck	0-3	*Very cobbly silt loam	*CL-ML, CL, SC-SM	*A-4	0	35-38	74-86	58-86	52-80	42-65	22-30	6-9
	3-12	*Silt loam, loam, very fine sandy loam	*CL	*A-4, A-6	0	0-5	89-100	79-100	71-95	58-78	24-30	9-12
	12-22	*Unweathered bedrock			---	---	---	---	---	---	---	---
Lava flows	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
74:												
Starbuck	0-3	*Silt loam	*CL	*A-6, A-4	0	0-5	100	89-100	80-95	65-79	26-33	9-13
	3-10	*Silt loam, loam, very fine sandy loam	*CL	*A-4, A-6	0	0-5	100	89-100	81-95	65-78	24-30	9-12
	10-14	*Silt loam, very fine sandy loam, fine sandy loam	*CL	*A-4, A-6	0	0-10	100	88-100	80-95	65-78	24-30	9-12
	14-24	*Unweathered bedrock			---	---	---	---	---	---	---	---
McPan	0-6	*Silt loam	*CL	*A-6	0	0-10	94-100	88-100	84-100	78-96	29-39	12-17
	6-20	*Silty clay loam, silt loam	*CL	*A-6, A-7	0	0-15	94-100	88-100	83-100	78-97	35-45	16-23
	20-27	*Cobbly loam, loam, silt loam	*CL	*A-6	0	0-21	94-100	82-100	79-100	64-84	29-37	13-18
	27-29	*Cemented material			---	---	---	---	---	---	---	---
	29-39	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
74:												
Rock outcrop----	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
75:												
Sunsetcone------	0-1	*Slightly decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	1-2	*Moderately decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	2-6	*Gravelly medial loam	*CL-ML, SC-SM, ML	*A-4	0	0	100	61-75	59-75	45-60	23-35	4-10
	6-8	*Gravelly medial loam	*CL-ML, SC-SM	*A-4	0	0	100	61-75	59-75	45-58	21-28	4-7
	8-12	*Very gravelly medial loam	*SC-SM	*A-4, A-2	0	0	100	42-52	41-52	31-40	21-28	4-7
	12-26	*Very gravelly medial sandy loam	*SM	*A-1	0	0	100	42-52	31-40	19-25	16-21	1-3
	26-32	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
	32-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
76:												
Sunsetcone------	0-1	*Slightly decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	1-2	*Moderately decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	2-6	*Gravelly medial loam	*CL-ML, ML, SC-SM	*A-4	0	0	100	61-75	59-75	45-60	23-35	4-10
	6-8	*Gravelly medial loam	*CL-ML, SC-SM	*A-4	0	0	100	61-75	59-75	45-58	21-28	4-7
	8-12	*Very gravelly medial loam	*SC-SM	*A-4, A-2	0	0	100	42-52	41-52	31-40	21-28	4-7
	12-26	*Very gravelly medial sandy loam	*SM	*A-1	0	0	100	42-52	31-40	19-25	16-21	1-3
	26-32	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
	32-60	*Cinders	*GW	*A-1	0	0	10	5	5	0-1	0-0	NP
Grassycone------	0-1	*Slightly decomposed plant material	*PT	*A-8	0	0	100	100	60-100	50-90	---	---
	1-3	*Medial fine sandy loam	*SM	*A-4, A-2	0	0	73-100	72-100	62-90	31-47	0-32	NP-3
	3-9	*Gravelly medial fine sandy loam, very gravelly medial fine sandy loam, medial fine sandy loam	*GM, SM	*A-2, A-1	0	0	37-73	34-72	30-64	15-33	17-27	1-3
	9-57	*Gravelly medial fine sandy loam	*GC-GM, GM	*A-1, A-2	0	0-4	46-63	44-62	39-57	17-26	17-26	3-6
	57-65	*Very cobbly loam, Cobbly clay loam	*GC, CL	*A-6	0	39-52	50-75	48-73	47-73	38-63	32-40	16-21

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
77:												
Taunton----------	0-5	*Silt loam	*CL	*A-6, A-4	0	0	100	94-100	85-95	69-79	26-33	9-13
	5-32	*Loam, fine sandy loam, sandy loam	*CL, SC-SM	*A-4, A-6	0	0-9	89-100	73-100	61-91	42-65	20-30	6-12
	32-44	*Cemented material			---	---	---	---	---	---	---	---
	44-54	*Unweathered bedrock			---	---	---	---	---	---	---	---
Paulville-------	0-6	*Loam	*CL	*A-6, A-4	0	0	94-100	88-100	75-93	54-69	27-38	10-16
	6-30	*Clay loam, silty clay loam, silt loam	*CL	*A-6, A-7	0	0	100	100	84-97	73-86	29-43	12-22
	30-50	*Silt loam, very fine sandy loam, loam	*CL, CL-ML	*A-4	0	0	100	100	89-94	70-75	20-27	6-10
	50-64	*Loamy fine sand, sandy loam, loam	*SC-SM, SM	*A-2, A-4	0	0	100	100	92-97	31-36	16-23	2-6
78:												
Techick----------	0-4	*Loam	*CL, SC-SM	*A-4, A-6	0	0	77-100	76-100	63-93	44-68	22-37	6-13
	4-12	*Clay loam, silty clay loam, loam	*CL	*A-7, A-6	0	0	78-100	77-100	67-96	52-77	37-48	17-24
	12-25	*Clay loam, silty clay loam, loam	*CL	*A-7, A-6	0	0	78-100	77-100	67-96	52-77	37-48	17-24
	25-46	*Loam, gravelly loam, sandy loam	*CL, SC-SM	*A-4, A-6	0	0	71-92	70-92	58-85	40-62	21-33	6-13
	46-60	*Extremely gravelly sand, extremely gravelly loamy sand, very gravelly sand	*GP	*A-1	0	0-11	26-44	22-42	17-33	1-4	0-17	NP-1

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
78:												
Soelberg	0-10	*Loam	*CL	*A-6	0	0	81-100	81-100	69-92	50-69	29-40	12-17
	10-28	*Clay loam, loam	*CL	*A-7, A-6	0	0	76-100	75-100	65-96	51-77	37-48	17-24
	28-36	*Gravelly loam	*GC, GC-GM, CL	*A-4, A-6, A-2	0	2-7	54-76	52-75	44-70	32-53	21-31	6-12
	36-40	*Extremely gravelly loamy coarse sand, extremely gravelly loamy sand, extremely gravelly sand, extremely gravelly coarse sand, very gravelly coarse sand	*GP-GM, GP	*A-1	0	0-6	15-34	12-31	7-18	3-8	0-14	NP
	40-60	*Extremely gravelly sand, extremely gravelly loamy coarse sand, extremely gravelly loamy sand, extremely gravelly coarse sand, very gravelly coarse sand	*GP	*A-1	0	3-5	15-34	11-31	8-24	1-2	0-14	NP
Lesbut	0-3	*Gravelly loam	*GC, GC-GM	*A-6, A-4, A-2	0	0	57-72	55-71	46-66	32-49	24-36	7-15
	3-13	*Gravelly loam	*GC, GC-GM	*A-6, A-4, A-2	0	0-4	52-72	50-71	42-66	29-49	24-36	7-15
	13-19	*Very gravelly sandy loam	*GC, GC-GM	*A-2, A-1	0	6-13	32-57	29-55	21-45	13-30	21-33	4-12
	19-60	*Extremely gravelly loamy sand	*GP-GM, GW	*A-1	0	12-38	10-41	7-38	5-31	2-11	0-19	NP-2
79:												
Techicknot	0-4	*Loam	*CL	*A-6	0	0	90-100	90-100	79-92	58-69	31-39	13-17
	4-29	*Clay loam, loam, silty clay loam	*CL	*A-7, A-6	0	0	83-100	82-100	71-95	54-74	37-48	17-24
	29-48	*Loam, silt loam, clay loam, silty clay loam	*CL	*A-6, A-7	0	0	78-100	77-100	67-99	51-79	33-46	15-24
	48-60	*Silt loam, loam, silty clay loam, clay loam	*CL	*A-6	0	0	78-100	77-100	69-100	59-87	29-40	13-21
Atom	0-3	*Silt loam	*CL	*A-6, A-7	0	0	90-100	90-100	86-100	81-99	31-42	12-19
	3-10	*Silty clay loam, clay loam, silt loam, loam	*CL	*A-7, A-6	0	0	90-100	90-100	77-100	73-98	30-47	12-25
	10-60	*Silt loam, silty clay loam, clay loam, loam	*CL	*A-6, A-7	0	0	91-100	90-100	89-100	85-100	35-46	17-25

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
79:												
Nargon	0-5	*Loam	*CL, SC	*A-6	3-5	3-10	94-100	78-100	66-93	48-69	28-39	11-17
	5-15	*Clay loam, silt loam	*CL, SC	*A-6, A-7	0	0-5	94-100	78-100	64-93	48-72	32-43	13-21
	15-22	*Stony loam, loam, gravelly silt loam	*CL, SC	*A-6	9-16	0-15	78-100	77-100	66-92	48-69	27-36	12-17
	22-32	*Unweathered bedrock			---	---	---	---	---	---	---	---
80:												
Treemold	0-2	*Very gravelly ashy loam	*GC-GM, GM	*A-2, A-4	0	0	42-52	42-52	40-52	29-39	21-32	3-7
	2-9	*Very gravelly ashy sandy loam, very gravelly ashy loam	*GC-GM, GM	*A-1, A-2	0	0	42-52	42-52	30-41	18-25	19-28	3-7
	9-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
Silentcone	0-4	*Very gravelly ashy loam	*GC-GM, GM	*A-2, A-1	0	15-18	34-44	34-44	33-44	23-33	21-32	3-7
	4-10	*Very gravelly ashy loam	*GM,	*A-2, A-1	0	15-18	34-44	34-44	33-44	23-33	20-31	1-6
	10-24	*Very gravelly ashy loam	*GM, GC-GM	*A-1, A-2	0	15-18	34-44	34-44	33-44	23-33	17-26	1-6
	24-48	*Unweathered bedrock			---	---	---	---	---	---	---	---
Lava flows	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
81:												
Trevino, stony surface	0-6	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	6-12	*Stony loam	*CL, SC-SM	*A-4, A-6	5-33	0	93-100	83-100	70-91	49-66	24-35	7-12
	12-19	*Stony loam, loam, silt loam	*CL, SC-SM	*A-4, A-6	0-20	0-4	84-100	69-100	58-91	41-66	23-31	7-12
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Portino, stony surface	0-12	*Cobbly loam	*CL, CL-ML	*A-4, A-6	0	9-23	84-100	84-100	79-100	60-81	20-31	4-12
	12-34	*Silt loam	*CL, CL-ML	*A-4, A-6	0	0-9	90-100	89-100	84-100	76-96	18-30	4-12
	34-44	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
82:												
Vining	0-6	*Fine sandy loam	*SC-SM, SM, CL	*A-4, A-2	0-4	0-9	89-100	73-100	64-96	31-51	18-28	3-10
	6-20	*Fine sandy loam, sandy loam	*SC, SM	*A-4, A-2, A-6	0-12	4-16	85-100	84-100	74-98	31-48	18-30	3-12
	20-24	*Sandy loam	*SC-SM, SM	*A-2, A-1, A-4	0	0-15	89-100	68-100	49-78	21-36	16-24	1-6
	24-34	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
82:												
Kecko	0-5	*Loamy fine sand	*SM, SC-SM	*A-2, A-4	0	0	100	90-100	83-97	30-38	0-22	NP-4
	5-30	*Fine sandy loam, loam	*SC, SC-SM	*A-4, A-2, A-6	0	0	100	89-100	79-97	35-47	20-30	6-12
	30-60	*Fine sandy loam, silt loam	*CL, SC-SM	*A-4, A-6	0	0	100	88-100	75-93	44-57	20-30	6-12
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
83:												
Vining	0-5	*Fine sandy loam	*SC-SM, SM, CL	*A-4, A-2	0-4	0-9	89-100	73-100	64-96	31-51	18-28	3-10
	5-25	*Fine sandy loam, sandy loam	*SC, SM	*A-4, A-2, A-6	0-12	4-16	85-100	84-100	74-98	31-48	18-30	3-12
	25-35	*Unweathered bedrock			---	---	---	---	---	---	---	---
Wapi	0-5	*Loamy fine sand	*SM, SC-SM	*A-2, A-4	0	0-4	95-100	90-100	82-98	29-38	0-22	NP-4
	5-19	*Loamy fine sand	*SM, SC-SM	*A-2, A-4	0	0-4	95-100	90-100	82-98	29-38	0-22	NP-4
	19-29	*Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	*Unweathered bedrock			---	---	---	---	---	---	---	---
84:												
Vitale	0-3	*Very cobbly loam	*GC, GC-GM	*A-2, A-7	2-6	21-42	44-71	42-69	34-66	24-49	24-41	7-17
	3-10	*Very cobbly loam, very gravelly clay loam, very cobbly clay loam	*GC, CL	*A-6, A-2, A-7	1-6	21-41	45-72	43-70	38-67	29-51	36-47	16-21
	10-19	*Very cobbly clay loam, very gravelly clay loam, very cobbly loam	*GC, CH	*A-7, A-2	1-6	12-54	38-73	35-72	30-69	24-55	37-51	17-25
	19-24	*Very cobbly clay loam, very gravelly clay loam, very cobbly loam	*GC, CH	*A-7, A-2	1-6	12-54	38-73	35-72	30-69	24-55	37-51	17-25
	24-33	*Very cobbly loam, very gravelly loam	*GC	*A-6, A-2	1-6	12-54	39-73	36-72	31-67	22-50	27-37	12-17
	33-43	*Unweathered bedrock			---	---	---	---	---	---	---	---

Table 24.--Engineering Soil Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
84:												
Blackspar--------	0-2	*Very cobbly loam	*GC, SC, GC-GM	*A-4, A-2, A-6, A-1	0	28-46	38-71	35-70	29-65	20-48	22-35	6-13
	2-6	*Very cobbly loam	*GC, SC, GC-GM	*A-4, A-2, A-6, A-1	0	28-46	38-71	35-70	29-65	20-48	22-35	6-13
	6-12	*Extremely cobbly loam, very cobbly loam, very cobbly clay loam	*GC	*A-2, A-7	0	26-42	29-57	26-55	22-53	16-40	30-41	13-21
	12-22	*Unweathered bedrock			---	---	---	---	---	---	---	---
85:												
Water----------	---	---	---	---	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties

(Values for sand and silt are shown as representative values. Values for clay are shown as ranges. Absence of an entry indicates that data were not estimated. Soil properties are measured or inferred from direct observations in the field or laboratory. Miscellaneous land type components such as Lava flows and Rock outcrop are not shown in the table)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
1:									
Bancroft--------	0-6	14	69	15-20	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	6-12	14	69	15-20	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	12-15	7	68	18-32	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	0.5-2.0
	15-26	7	65	18-32	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	0.5-2.0
	26-48	7	65	18-32	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	0.5-2.0
	48-60	7	68	18-32	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	0.5-2.0
2:									
Bancroft--------	0-11	14	69	15-20	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	11-40	9	63	18-32	1.50-1.55	0.6-2.0	0.19-0.21	0.0-2.9	0.5-2.0
	40-80	44	44	5-18	1.55-1.65	0.6-2.0	0.06-0.16	0.0-2.9	0.0-0.5
3:									
Bigcinder-------	0-2	60	36	2-6	0.70-0.80	5.9-20.0	0.11-0.13	0.0-3.0	2.0-4.0
	2-6	65	31	2-6	0.70-0.80	5.9-20.0	0.07-0.08	0.0-3.0	2.0-4.0
	6-10	70	28	0-4	0.80-0.90	5.9-20.0	0.06-0.08	0.0-3.0	1.0-2.0
	10-20	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
	20-24	80	15	2-6	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
	24-30	75	23	0-4	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
	30-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
3A:									
Bigcinder-------	0-2	60	36	2-6	0.70-0.80	5.9-20.0	0.11-0.13	0.0-3.0	2.0-4.0
	2-6	65	31	2-6	0.70-0.80	5.9-20.0	0.07-0.08	0.0-3.0	2.0-4.0
	6-10	70	28	0-4	0.80-0.90	5.9-20.0	0.06-0.08	0.0-3.0	1.0-2.0
	10-20	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
	20-24	80	15	2-6	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
	24-30	75	23	0-4	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
	30-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
4:									
Blackspar-------	0-7	44	41	10-20	1.35-1.55	0.6-2.0	0.05-0.07	0.0-2.9	1.0-2.0
	7-17	38	36	20-30	1.40-1.60	0.6-2.0	0.04-0.06	0.0-2.9	0.5-1.0
	17-27	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
5:									
Bringmee--------	0-15	42	38	15-25	1.50-1.60	0.6-2.0	0.13-0.19	3.0-5.9	1.0-4.0
	15-34	37	35	20-35	1.25-1.45	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0
	34-47	47	26	20-35	1.40-1.50	0.2-0.6	0.12-0.17	3.0-5.9	0.5-1.0
	47-61	68	24	0-15	1.40-1.60	2.0-20.0	0.02-0.08	0.0-2.9	0.0-0.5
Hutton----------	0-4	34	36	27-35	1.25-1.45	0.2-0.6	0.18-0.20	3.0-5.9	2.0-4.0
	4-19	34	32	27-40	1.25-1.45	0.2-0.6	0.16-0.18	3.0-5.9	2.0-4.0
	19-62	22	28	40-60	1.30-1.50	0.0-0.1	0.08-0.16	6.0-8.9	1.0-2.0
6:									
Carey lake------	0-12	44	41	12-18	1.25-1.35	0.6-2.0	0.16-0.18	0.0-2.9	2.0-3.0
	12-20	23	50	22-33	1.25-1.40	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0
	20-47	56	25	15-28	1.30-1.45	0.6-2.0	0.12-0.18	0.0-2.9	0.5-1.0
	47-72	45	41	10-18	1.30-1.50	0.6-2.0	0.12-0.19	0.0-2.9	0.0-0.5
7:									
Northcrater-----	0-4	75	21	2-6	0.80-0.90	5.9-20.0	0.04-0.05	0.0-3.0	2.0-4.0
	4-8	75	21	2-6	0.80-0.90	5.9-20.0	0.03-0.04	0.0-3.0	2.0-4.0
	8-12	75	21	2-6	1.15-1.25	5.9-20.0	0.02-0.03	0.0-3.0	1.0-2.0
	12-20	80	16	2-6	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	1.0-2.0
	20-30	80	16	0-6	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
	30-60	85	11	0-6	1.15-1.25	5.9-20.0	0.03-0.04	0.0-3.0	0.5-1.0
8:									
Cox--------------	0-3	65	23	8-15	1.45-1.50	2.0-6.0	0.07-0.09	0.0-2.9	1.0-2.0
	3-12	66	20	10-18	1.45-1.55	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0
	12-22	---	---	---	---	---	---	---	---
Rehfield--------	0-11	74	19	4-10	1.25-1.40	6.0-20.0	0.07-0.10	0.0-2.9	1.0-2.0
	11-23	67	20	12-15	1.35-1.55	2.0-6.0	0.12-0.15	0.0-2.9	0.5-1.0
	23-42	62	14	18-31	1.40-1.60	0.6-2.0	0.13-0.17	3.0-5.9	0.0-0.0
	42-67	85	4	8-13	1.40-1.60	0.6-6.0	0.06-0.12	0.0-2.9	0.0-0.0
9:									
Deerhorn--------	0-9	67	20	10-15	1.45-1.50	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0
	9-17	50	26	18-30	1.40-1.50	0.2-0.6	0.14-0.18	3.0-5.9	0.5-1.0
	17-21	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	21-24	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	24-34	---	---	---	---	---	---	---	---
Rehfield--------	0-11	74	19	4-10	1.25-1.40	6.0-20.0	0.07-0.10	0.0-2.9	1.0-2.0
	11-23	67	20	12-15	1.35-1.55	2.0-6.0	0.12-0.15	0.0-2.9	0.5-1.0
	23-42	62	14	18-31	1.40-1.60	0.6-2.0	0.13-0.17	3.0-5.9	0.0-0.0
	42-67	85	4	8-13	1.40-1.60	0.6-6.0	0.06-0.12	0.0-2.9	0.0-0.0

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
10:									
Deerhorn--------	0-9	67	20	10-15	1.45-1.50	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0
	9-17	50	26	18-30	1.40-1.50	0.2-0.6	0.14-0.18	3.0-5.9	0.5-1.0
	17-21	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	21-24	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	24-34	---	---	---	---	---	---	---	---
Wildors---------	0-10	67	20	10-17	1.25-1.35	2.0-6.0	0.05-0.07	0.0-2.9	1.0-2.0
	10-15	47	39	8-20	1.35-1.50	0.6-2.0	0.05-0.11	0.0-2.9	0.0-0.5
	15-22	47	39	8-20	1.35-1.50	0.6-2.0	0.05-0.11	0.0-2.9	0.0-0.5
	22-24	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	24-34	---	---	---	---	---	---	---	---
11:									
Deerhorn--------	0-9	67	20	10-15	1.45-1.50	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0
	9-17	50	26	18-30	1.40-1.50	0.2-0.6	0.14-0.18	3.0-5.9	0.5-1.0
	17-21	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	21-28	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	28-38	---	---	---	---	---	---	---	---
Wildors---------	0-9	67	20	10-17	1.25-1.35	2.0-6.0	0.05-0.07	0.0-2.9	1.0-2.0
	9-15	47	39	8-20	1.35-1.50	0.6-2.0	0.05-0.11	0.0-2.9	0.0-0.5
	15-21	47	39	8-20	1.35-1.50	0.6-2.0	0.05-0.11	0.0-2.9	0.0-0.5
	21-24	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	24-34	---	---	---	---	---	---	---	---
Rekima----------	0-3	68	20	10-14	1.30-1.50	2.0-6.0	0.05-0.10	0.0-2.9	0.7-1.0
	3-15	68	20	10-14	1.30-1.50	0.6-2.0	0.05-0.10	0.0-2.9	0.0-0.5
	15-18	66	20	10-18	1.30-1.50	0.6-2.0	0.05-0.10	0.0-2.9	0.0-0.5
	18-19	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	19-29	---	---	---	---	---	---	---	---
12:									
Deuce-----------	0-2	26	54	15-25	1.20-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0
	2-6	25	52	16-30	1.20-1.40	0.6-2.0	0.12-0.17	0.0-2.9	0.5-1.0
	6-19	24	51	18-32	1.25-1.45	0.6-2.0	0.12-0.17	3.0-5.9	0.5-1.0
	19-29	---	---	---	---	---	---	---	---
Nargon----------	0-5	26	52	18-25	1.20-1.40	0.6-2.0	0.16-0.18	0.0-2.9	1.0-2.0
	5-15	36	36	20-30	1.20-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	15-22	41	37	18-25	1.20-1.40	0.2-0.6	0.17-0.21	0.0-2.9	0.0-0.5
	22-32	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
13:									
Drage cool------	0-14	42	38	15-25	1.25-1.40	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0
	14-30	35	33	28-35	1.25-1.50	0.2-0.6	0.08-0.12	3.0-5.9	0.5-1.0
	30-61	67	15	10-25	1.25-1.50	0.6-2.0	0.04-0.06	0.0-2.9	0.0-0.5
14:									
Drage cool------	0-16	43	38	12-25	1.30-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	16-41	35	33	28-35	1.25-1.50	0.2-0.6	0.08-0.12	3.0-5.9	0.5-1.0
	41-61	67	15	10-25	1.25-1.50	0.6-2.0	0.04-0.06	0.0-2.9	0.0-0.5
15:									
Echocrater------	0-3	80	18	1-4	0.80-0.90	5.9-20.0	0.05-0.06	0.0-3.0	2.0-4.0
	3-8	80	18	1-4	0.80-0.90	5.9-20.0	0.04-0.05	0.0-3.0	2.0-4.0
	8-15	80	18	1-4	0.80-0.90	5.9-20.0	0.04-0.05	0.0-3.0	1.0-2.0
	15-25	80	18	1-4	1.00-1.25	5.9-20.0	0.02-0.03	0.0-3.0	0.5-1.0
	25-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
16:									
Farmell---------	0-5	25	53	20-25	1.10-1.30	0.6-2.0	0.16-0.20	0.0-2.9	0.7-1.0
	5-8	20	53	27-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	8-16	23	29	40-55	1.00-1.20	0.1-0.2	0.14-0.16	9.0-25.0	1.0-2.0
	16-36	7	51	35-50	1.20-1.35	0.1-0.2	0.15-0.19	6.0-8.9	0.0-0.5
	36-56	20	48	27-40	1.40-1.55	0.2-0.6	0.16-0.18	3.0-5.9	0.0-0.5
	56-80	7	51	35-50	1.20-1.35	0.1-0.2	0.15-0.19	6.0-8.9	0.0-0.5
Power-----------	0-10	11	69	18-22	1.30-1.50	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	10-23	7	66	24-35	1.20-1.50	0.2-0.6	0.16-0.21	3.0-5.9	0.5-1.0
	23-40	24	51	18-27	1.25-1.45	0.6-2.0	0.12-0.17	3.0-5.9	0.5-1.0
	40-64	61	22	15-20	1.35-1.55	0.6-2.0	0.16-0.18	0.0-2.9	0.0-0.5
17:									
Goodalfs--------	0-3	30	60	6-16	0.70-0.80	0.6-2.0	0.09-0.21	3.0-6.0	2.0-4.0
	3-10	34	53	8-18	0.80-0.90	0.6-2.0	0.19-0.21	3.0-6.0	2.0-4.0
	10-24	18	60	18-24	1.15-1.30	0.6-2.0	0.19-0.21	3.0-6.0	1.0-3.0
	24-40	12	60	26-32	1.30-1.40	0.1-0.6	0.19-0.21	6.0-9.0	0.5-2.0
	40-60	21	55	20-26	1.25-1.35	0.6-2.0	0.19-0.21	3.0-6.0	0.5-1.0
Craters---------	0-4	66	30	2-6	0.70-0.80	0.6-2.0	0.04-0.05	0.0-3.0	2.0-4.0
	4-10	66	28	4-8	0.70-0.80	0.6-2.0	0.04-0.05	0.0-3.0	1.0-3.0
	10-22	57	35	6-10	0.80-0.90	0.6-2.0	0.03-0.04	0.0-3.0	1.0-3.0
	22-38	55	35	8-14	1.15-1.25	0.6-2.0	0.04-0.06	0.0-3.0	0.5-1.0
	38-60	53	35	10-12	1.20-1.25	0.6-2.0	0.05-0.06	0.0-3.0	0.5-1.0

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
18:									
Goodington------	0-10	26	54	15-25	1.30-1.45	0.2-0.6	0.18-0.22	0.0-2.9	1.0-3.0
	10-26	6	47	40-55	1.30-1.45	0.0-0.1	0.16-0.18	6.0-8.9	0.5-1.0
	26-56	20	48	25-40	1.40-1.55	0.2-0.6	0.16-0.18	3.0-5.9	0.0-0.5
	56-66	---	---	---	---	---	---	---	---
Manard----------	0-11	24	52	20-27	1.20-1.30	0.2-0.6	0.18-0.20	3.0-5.9	2.0-4.0
	11-20	7	48	40-50	1.30-1.40	0.0-0.1	0.14-0.16	6.0-8.9	0.0-0.5
	20-26	22	28	40-60	1.25-1.34	0.0-0.1	0.11-0.19	6.0-8.9	0.5-1.0
	26-28	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	28-38	---	---	---	---	---	---	---	---
19:									
Hal--------------	0-6	44	45	7-15	0.70-0.80	0.6-2.0	0.12-0.16	0.0-2.9	1.0-2.0
	6-12	44	45	7-15	0.70-0.80	0.6-2.0	0.12-0.16	0.0-2.9	1.0-2.0
	12-24	44	45	7-15	0.80-0.90	0.6-2.0	0.12-0.16	0.0-2.9	0.5-1.0
	24-40	44	45	7-15	0.90-1.00	0.6-2.0	0.12-0.16	0.0-2.9	0.5-1.0
	40-60	83	11	2-10	0.90-1.00	5.9-20.0	0.01-0.04	0.0-2.9	0.0-0.5
Moonville-------	0-7	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	4.0-15
	7-15	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	15-31	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	31-60	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0
20:									
Howcan----------	0-4	43	40	10-25	1.10-1.30	2.0-6.0	0.10-0.13	0.0-2.9	2.0-6.0
	4-10	43	40	10-25	1.15-1.30	2.0-6.0	0.06-0.11	0.0-2.9	1.0-3.0
	10-38	40	38	20-25	1.20-1.40	0.6-2.0	0.05-0.10	0.0-2.9	0.5-2.0
	38-54	66	15	15-23	1.30-1.50	2.0-6.0	0.04-0.08	0.0-2.9	0.0-1.0
	54-64	---	---	---	---	---	---	---	---
Zeebar----------	0-3	41	37	18-27	1.40-1.55	0.6-2.0	0.12-0.14	0.0-2.9	2.0-3.0
	3-19	40	38	18-27	1.45-1.55	0.6-2.0	0.09-0.13	0.0-2.9	1.0-2.0
	19-41	36	36	20-30	1.50-1.60	0.2-0.6	0.07-0.12	0.0-2.9	0.5-1.0
	41-60	42	38	15-25	1.50-1.65	0.6-2.0	0.02-0.03	0.0-2.9	0.0-0.5
Hutchley--------	0-4	42	38	15-25	1.15-1.30	0.6-2.0	0.12-0.16	0.0-2.9	1.0-2.0
	4-11	35	34	27-35	1.35-1.50	0.2-0.6	0.09-0.12	3.0-5.9	0.5-2.0
	11-21	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
21:									
Huddle	0-2	44	45	7-15	0.85-0.95	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0
	2-7	44	45	7-15	0.85-0.95	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	7-19	42	43	12-18	0.85-0.95	0.6-2.0	0.14-0.16	0.0-2.9	0.0-0.5
	19-39	42	43	12-18	0.85-0.95	0.6-2.0	0.14-0.16	0.0-2.9	0.0-0.5
	39-50	33	44	18-27	0.85-0.95	0.6-2.0	0.14-0.16	3.0-5.9	0.0-0.5
	50-60	---	---	---	---	---	---	---	---
Moonville	0-7	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	4.0-15
	7-15	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	15-31	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0
	31-60	45	45	7-15	0.80-0.90	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0
22:									
Hutton	0-4	34	36	27-35	1.25-1.45	0.2-0.6	0.18-0.20	3.0-5.9	2.0-4.0
	4-19	34	32	27-40	1.25-1.45	0.2-0.6	0.16-0.18	3.0-5.9	2.0-4.0
	19-62	22	28	40-60	1.30-1.50	0.0-0.1	0.08-0.16	6.0-8.9	1.0-2.0
23:									
Infernocone	0-5	60	36	2-6	0.70-0.80	2.0-5.9	0.09-0.10	0.0-3.0	2.0-4.0
	5-10	60	36	2-6	0.80-0.90	2.0-5.9	0.09-0.10	0.0-3.0	2.0-4.0
	10-25	65	33	1-4	0.80-0.90	2.0-5.9	0.09-0.10	0.0-3.0	1.0-2.0
	25-35	65	33	1-4	1.15-1.25	2.0-5.9	0.04-0.05	0.0-3.0	0.5-1.0
	35-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
24:									
Infernocone	0-5	60	36	2-6	0.70-0.80	2.0-5.9	0.09-0.10	0.0-3.0	2.0-4.0
	5-10	60	36	2-6	0.80-0.90	2.0-5.9	0.09-0.10	0.0-3.0	2.0-4.0
	10-25	65	33	1-4	0.80-0.90	2.0-5.9	0.09-0.10	0.0-3.0	1.0-2.0
	25-35	65	33	1-4	1.15-1.25	2.0-5.9	0.04-0.05	0.0-3.0	0.5-1.0
	35-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
25:									
Justesen	0-7	44	41	12-18	1.20-1.30	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	7-24	37	35	23-34	1.30-1.45	0.2-0.6	0.13-0.20	3.0-5.9	0.5-2.0
	24-62	63	19	15-20	1.40-1.50	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
26:									
Justesen	0-7	44	41	12-18	1.20-1.30	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	7-24	37	35	23-34	1.30-1.45	0.2-0.6	0.13-0.20	3.0-5.9	0.5-2.0
	24-62	63	19	15-20	1.40-1.50	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
27:									
Justesen--------	0-10	44	41	12-18	1.20-1.30	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	10-25	37	37	23-34	1.30-1.45	0.2-0.6	0.13-0.20	3.0-5.9	0.5-2.0
	25-60	63	19	15-20	1.40-1.50	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
Drage-----------	0-6	40	38	18-27	1.20-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0
	6-15	35	34	27-35	1.20-1.40	0.6-2.0	0.11-0.14	3.0-5.9	1.0-2.0
	15-30	35	33	30-35	1.30-1.50	0.2-0.6	0.08-0.12	3.0-5.9	0.5-1.0
	30-43	34	37	27-32	1.40-1.60	0.6-2.0	0.04-0.08	0.0-2.9	0.0-0.5
	43-60	42	37	15-27	1.20-1.40	0.6-2.0	0.04-0.08	0.0-2.9	0.0-0.5
29:									
Cinderhurst-----	0-3	14	69	15-20	0.80-0.90	0.6-2.0	0.06-0.09	0.0-2.9	2.0-4.0
	3-8	11	67	18-25	0.80-0.90	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0
	8-18	---	---	---	---	---	---	---	---
30:									
Cinderhurst, extremely shallow--------	0-2	14	69	15-20	0.80-0.90	0.6-2.0	0.06-0.09	0.0-2.9	2.0-4.0
	2-12	---	---	---	---	---	---	---	---
31:									
Lavacreek-------	0-10	21	69	7-15	0.70-0.80	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	10-19	45	45	7-15	0.80-0.90	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	19-36	45	45	7-15	1.00-1.20	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	36-42	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	42-59	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	59-69	---	---	---	---	---	---	---	---
Dollarhide------	0-8	31	56	8-18	0.85-0.95	2.0-6.0	0.08-0.13	0.0-2.9	1.0-3.0
	8-13	45	42	8-18	1.35-1.50	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0
	13-23	---	---	---	---	---	---	---	---
32:									
Lavacreek-------	0-10	21	69	7-15	0.70-0.80	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	10-19	45	45	7-15	0.80-0.90	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	19-36	45	45	7-15	1.00-1.20	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	36-42	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	42-59	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	59-69	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
32:									
Dollarhide------	0-7	31	56	8-18	0.85-0.95	2.0-6.0	0.08-0.13	0.0-2.9	1.0-3.0
	7-13	45	42	8-18	1.35-1.50	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0
	13-23	---	---	---	---	---	---	---	---
33:									
Lavacreek, cold	0-10	21	69	7-15	0.70-0.80	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	10-19	45	45	7-15	0.80-0.90	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	19-36	45	45	7-15	1.00-1.20	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	36-42	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	42-59	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	59-69	---	---	---	---	---	---	---	---
Dollarhide, cold	0-7	31	56	8-18	0.85-0.95	2.0-6.0	0.08-0.13	0.0-2.9	1.0-3.0
	7-13	45	42	8-18	1.35-1.50	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0
	13-23	---	---	---	---	---	---	---	---
34:									
Lavacreek-------	0-10	21	69	7-15	0.70-0.80	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	10-19	45	45	7-15	0.80-0.90	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	19-36	45	45	7-15	1.00-1.20	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	36-42	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	42-59	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	59-69	---	---	---	---	---	---	---	---
Dollarhide------	0-8	31	56	8-18	0.85-0.95	2.0-6.0	0.08-0.13	0.0-2.9	1.0-3.0
	8-13	45	42	8-18	1.35-1.50	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0
	13-23	---	---	---	---	---	---	---	---
Grassycone------	0-1	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	1-3	65	31	2-6	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	2.0-6.0
	3-9	64	31	4-6	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	1.0-4.0
	9-57	70	22	6-10	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	0.2-2.0
	57-65	31	43	24-30	1.05-1.20	0.6-2.0	0.10-0.12	0.0-2.9	0.0-0.5
35:									
Lavacreek-------	0-10	21	69	7-15	0.70-0.80	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	10-19	45	45	7-15	0.80-0.90	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	19-36	45	45	7-15	1.00-1.20	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0
	36-42	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	42-59	68	24	6-10	1.20-1.30	2.0-5.9	0.05-0.08	0.0-2.9	0.5-1.0
	59-69	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
35:									
Vitale----------	0-3	43	38	12-25	1.30-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	3-10	38	36	24-30	1.40-1.50	0.6-2.0	0.05-0.07	3.0-5.9	1.0-3.0
	10-19	33	36	25-35	1.40-1.50	0.1-0.2	0.05-0.07	3.0-5.9	1.0-3.0
	19-24	33	36	25-35	1.40-1.50	0.1-0.2	0.05-0.07	3.0-5.9	1.0-3.0
	24-33	41	37	18-25	1.40-1.55	0.6-2.0	0.05-0.07	0.0-2.9	0.0-1.0
	33-43	---	---	---	---	---	---	---	---
36:									
McBiggam--------	0-3	14	73	10-15	1.25-1.40	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0
	3-10	14	73	10-15	1.25-1.40	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0
	10-15	7	67	22-32	1.25-1.40	0.2-0.6	0.16-0.18	3.0-5.9	0.5-1.0
	15-26	7	66	22-32	1.25-1.40	0.2-0.6	0.16-0.18	3.0-5.9	0.5-1.0
	26-36	7	48	40-50	1.30-1.45	0.1-0.2	0.13-0.17	6.0-8.9	0.0-1.0
	36-46	7	48	40-50	1.30-1.45	0.1-0.2	0.13-0.17	6.0-8.9	0.0-1.0
	46-80	6	59	30-40	1.25-1.45	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5
37:									
McCarey----------	0-11	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	11-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-28	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	28-38	---	---	---	---	---	---	---	---
Beartrap--------	0-16	46	44	8-12	1.20-1.40	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	16-52	60	25	12-18	1.20-1.45	0.6-2.0	0.10-0.20	0.0-2.9	0.5-1.0
	52-62	---	---	---	---	---	---	---	---
38:									
McCarey----------	0-11	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	11-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-28	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	28-38	---	---	---	---	---	---	---	---
Beartrap--------	0-16	46	44	8-12	1.20-1.40	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	16-52	60	25	12-18	1.20-1.45	0.6-2.0	0.10-0.20	0.0-2.9	0.5-1.0
	52-62	---	---	---	---	---	---	---	---
39:									
McCarey----------	0-11	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	11-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-28	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	28-38	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
39:									
Beartrap--------	0-16	46	44	8-12	1.20-1.40	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	16-52	60	25	12-18	1.20-1.45	0.6-2.0	0.10-0.20	0.0-2.9	0.5-1.0
	52-62	---	---	---	---	---	---	---	---
40:									
McCarey---------	0-10	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	10-22	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	22-37	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	37-47	---	---	---	---	---	---	---	---
Justesen--------	0-14	44	41	12-18	1.20-1.30	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	14-31	37	35	23-34	1.30-1.45	0.2-0.6	0.13-0.20	3.0-5.9	0.5-2.0
	31-64	51	32	15-20	1.40-1.50	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
41:									
McCarey---------	0-10	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	10-22	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	22-37	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	37-47	---	---	---	---	---	---	---	---
Molyneux--------	0-13	44	41	10-20	1.30-1.50	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	13-50	34	36	25-35	1.40-1.55	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0
	50-75	48	27	20-30	1.40-1.60	0.2-0.6	0.13-0.15	3.0-5.9	0.5-1.0
42:									
McCarey---------	0-11	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	11-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-28	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	28-38	---	---	---	---	---	---	---	---
Molyneux--------	0-13	44	41	10-20	1.30-1.50	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	13-62	34	42	25-35	1.40-1.55	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0
43:									
McCarey---------	0-10	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	10-22	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	22-37	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	37-47	---	---	---	---	---	---	---	---
Pedleford-------	0-5	45	42	10-16	1.30-1.50	0.6-2.0	0.06-0.08	0.0-2.9	1.0-2.0
	5-13	36	48	13-19	1.40-1.60	0.6-2.0	0.08-0.12	0.0-2.9	0.5-2.0
	13-29	31	56	10-16	1.30-1.50	0.6-2.0	0.06-0.08	0.0-2.9	0.0-0.5
	29-33	45	42	11-15	1.60-1.65	0.6-2.0	0.09-0.11	0.0-2.9	0.5-1.0
	33-43	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
44:									
McCarey	0-11	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	11-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-28	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	28-38	---	---	---	---	---	---	---	---
Pedleford	0-6	45	42	10-16	1.30-1.50	0.6-2.0	0.06-0.08	0.0-2.9	1.0-2.0
	6-26	36	48	13-19	1.40-1.60	0.6-2.0	0.08-0.12	0.0-2.9	0.5-2.0
	26-34	31	56	10-16	1.30-1.50	0.6-2.0	0.06-0.08	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
45:									
McCarey	0-5	44	41	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	5-22	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	22-35	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	35-45	---	---	---	---	---	---	---	---
46:									
McCarey	0-12	30	55	10-20	1.25-1.55	0.6-2.0	0.16-0.21	0.0-2.9	1.0-3.0
	12-18	35	38	20-34	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	18-33	36	44	15-25	1.40-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.0-1.0
	33-43	---	---	---	---	---	---	---	---
Splittop	0-4	37	42	18-25	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	4-30	33	44	20-27	1.20-1.40	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0
	30-40	---	---	---	---	---	---	---	---
47:									
McPan	0-6	11	67	18-25	1.20-1.50	0.6-2.0	0.14-0.20	0.0-2.9	1.0-2.0
	6-20	9	63	24-32	1.20-1.50	0.2-0.6	0.14-0.20	3.0-5.9	0.5-1.0
	20-27	33	44	20-26	1.25-1.60	0.6-2.0	0.13-0.20	0.0-2.9	0.0-0.5
	27-29	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	29-39	---	---	---	---	---	---	---	---
Chijer	0-6	60	27	8-18	1.25-1.45	0.6-2.0	0.13-0.18	0.0-2.9	0.6-1.0
	6-11	44	43	8-18	1.35-1.55	0.6-2.0	0.10-0.18	0.0-2.9	0.0-0.5
	11-61	61	28	8-13	1.35-1.55	0.6-2.0	0.10-0.18	0.0-2.9	0.0-0.5
48:									
Molyneux	0-13	44	41	10-20	1.30-1.50	0.6-2.0	0.13-0.19	0.0-2.9	1.0-3.0
	13-50	34	36	25-35	1.40-1.55	0.2-0.6	0.14-0.20	3.0-5.9	1.0-2.0
	50-75	48	27	20-30	1.40-1.60	0.2-0.6	0.13-0.15	3.0-5.9	0.5-1.0

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
49:									
Nargon	0-5	42	37	17-25	1.20-1.40	0.6-2.0	0.17-0.19	0.0-2.9	1.0-2.0
	5-15	36	36	20-30	1.20-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	15-22	41	37	18-25	1.20-1.40	0.2-0.6	0.17-0.21	0.0-2.9	0.0-0.5
	22-32	---	---	---	---	---	---	---	---
Atom	0-3	10	68	18-27	1.15-1.35	0.6-2.0	0.19-0.21	3.0-5.9	1.0-2.0
	3-10	7	61	18-35	1.15-1.35	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	10-60	9	65	25-35	1.20-1.35	0.2-0.6	0.09-0.13	3.0-5.9	0.0-0.5
Techicknot	0-4	40	38	20-25	1.25-1.30	0.6-2.0	0.15-0.18	0.0-2.9	1.0-2.0
	4-29	36	34	25-35	1.30-1.40	0.2-2.0	0.16-0.21	3.0-5.9	1.0-2.0
	29-48	35	39	22-35	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	48-60	24	51	20-30	1.40-1.50	0.2-2.0	0.16-0.21	0.0-2.9	0.0-0.5
50:									
Nargon	0-2	26	52	18-25	1.20-1.40	0.6-2.0	0.16-0.18	0.0-2.9	1.0-2.0
	2-7	36	36	20-30	1.20-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	7-11	38	36	18-35	1.20-1.30	0.2-2.0	0.12-0.20	0.0-2.9	0.0-0.5
	11-21	41	37	18-25	1.20-1.40	0.2-0.6	0.17-0.21	0.0-2.9	0.0-0.5
	21-31	---	---	---	---	---	---	---	---
Deuce	0-2	26	54	15-25	1.20-1.40	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0
	2-6	25	52	16-30	1.20-1.40	0.6-2.0	0.12-0.17	0.0-2.9	0.5-1.0
	6-19	24	51	18-32	1.25-1.45	0.6-2.0	0.12-0.17	3.0-5.9	0.5-1.0
	19-29	---	---	---	---	---	---	---	---
51:									
Neeley	0-10	21	69	5-14	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0
	10-16	21	67	6-18	1.25-1.45	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	16-60	21	69	6-14	1.25-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0
Hodad	0-7	14	73	8-18	1.15-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0
	7-17	14	73	8-18	1.15-1.40	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0
	17-36	14	73	8-18	1.15-1.40	0.6-2.0	0.19-0.21	0.0-2.9	0.0-0.5
	36-46	---	---	---	---	---	---	---	---
52:									
Pagari	0-11	68	20	10-15	1.40-1.50	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0
	11-17	67	20	10-17	1.40-1.50	2.0-6.0	0.06-0.10	0.0-2.9	0.0-0.5
	17-31	39	37	18-30	1.50-1.60	0.6-2.0	0.07-0.12	3.0-5.9	0.0-0.5
	31-46	46	35	14-25	1.50-1.60	0.6-2.0	0.06-0.10	0.0-2.9	0.0-0.5
	46-56	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
52:									
Rehfield	0-10	84	9	4-10	1.25-1.40	5.9-20.0	0.07-0.10	0.0-2.9	1.0-2.0
	10-42	62	14	18-31	1.40-1.60	0.6-2.0	0.13-0.17	3.0-5.9	0.0-1.0
	42-67	85	4	8-13	1.40-1.60	0.6-6.0	0.06-0.12	0.0-2.9	0.0-0.0
53:									
Paulville	0-6	42	38	16-24	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	6-30	20	51	18-31	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5
	30-50	33	54	10-15	1.30-1.45	0.6-2.0	0.15-0.17	0.0-2.9	0.0-0.5
	50-64	78	14	5-10	1.50-1.65	2.0-6.0	0.11-0.13	0.0-2.9	0.0-0.5
McPan	0-6	11	67	18-25	1.20-1.50	0.6-2.0	0.14-0.20	0.0-2.9	1.0-2.0
	6-20	9	63	24-32	1.20-1.50	0.2-0.6	0.14-0.20	3.0-5.9	0.5-1.0
	20-27	33	44	20-26	1.25-1.60	0.6-2.0	0.13-0.20	0.0-2.9	0.0-0.5
	27-29	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	29-39	---	---	---	---	---	---	---	---
Starbuck	0-4	63	24	10-16	1.35-1.55	2.0-6.0	0.10-0.16	0.0-2.9	0.7-1.0
	4-17	60	24	14-18	1.30-1.50	0.6-2.0	0.13-0.18	0.0-2.9	0.0-0.5
	17-27	---	---	---	---	---	---	---	---
55:									
Portino	0-12	14	73	8-18	1.30-1.50	0.6-2.0	0.17-0.21	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
56:									
Portino	0-12	14	73	8-18	1.30-1.50	0.6-2.0	0.17-0.21	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
57:									
Portino, stony surface	0-12	43	44	8-18	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
58:									
Portino, stony surface	0-12	43	44	8-18	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
59:									
Portino, stony surface--------	0-12	43	44	8-18	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
Trevino, stony surface--------	0-6	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	6-12	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	12-19	44	41	12-18	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.5-1.0
	19-29	---	---	---	---	---	---	---	---
60:									
Portneuf, bedrock substratum-----	0-15	14	73	8-18	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	15-57	21	69	6-13	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.0-1.0
	57-67	---	---	---	---	---	---	---	---
61:									
Portneuf, bedrock substratum-----	0-15	14	73	8-18	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	15-57	21	69	6-13	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.0-1.0
	57-67	---	---	---	---	---	---	---	---
62:									
Portneuf, bedrock substratum-----	0-15	14	73	8-18	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	15-57	21	69	6-13	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.0-1.0
	57-67	---	---	---	---	---	---	---	---
63:									
Portneuf--------	0-10	64	26	5-15	1.50-1.60	2.0-6.0	0.11-0.13	0.0-2.9	0.6-1.0
	10-34	21	69	6-13	1.25-1.50	0.2-0.6	0.17-0.19	0.0-2.9	0.5-1.0
	34-60	22	70	5-12	1.15-1.45	2.0-6.0	0.19-0.21	0.0-2.9	0.0-0.5
Quincy----------	0-10	96	1	1-6	1.45-1.60	6.0-20.0	0.08-0.11	0.0-2.9	0.5-1.0
	10-60	89	7	1-7	1.50-1.70	6.0-20.0	0.08-0.12	0.0-2.9	0.0-0.5
64:									
Povey----------	0-14	44	41	10-20	1.20-1.40	0.6-2.0	0.07-0.13	0.0-2.9	2.0-3.0
	14-35	44	41	10-20	1.20-1.40	0.6-2.0	0.06-0.08	0.0-2.9	1.0-2.0
	35-60	45	43	8-15	1.25-1.45	0.6-2.0	0.03-0.05	0.0-2.9	0.5-2.0
	60-70	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
64:									
Dollarhide------	0-7	31	56	8-18	0.85-0.95	2.0-6.0	0.08-0.13	0.0-2.9	1.0-3.0
	7-13	45	42	8-18	1.35-1.50	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0
	13-23	---	---	---	---	---	---	---	---
65:									
Quincy----------	0-24	96	1	1-6	1.35-1.50	5.9-20.0	0.08-0.11	0.0-2.9	0.5-1.0
	24-69	79	17	1-7	1.45-1.60	5.9-20.0	0.06-0.09	0.0-2.9	0.5-1.0
Walco----------	0-13	97	1	0-5	1.45-1.65	5.9-20.0	0.05-0.08	0.0-2.9	0.7-1.0
	13-21	81	17	0-5	1.45-1.65	5.9-20.0	0.05-0.08	0.0-2.9	0.0-0.5
	21-31	---	---	---	---	---	---	---	---
66:									
Rehfield--------	0-12	84	9	4-10	1.25-1.40	5.9-20.0	0.07-0.10	0.0-2.9	1.0-2.0
	12-40	62	14	18-31	1.40-1.60	0.6-2.0	0.13-0.17	3.0-5.9	0.0-1.0
	40-61	85	4	8-13	1.40-1.60	0.6-6.0	0.06-0.12	0.0-2.9	0.0-0.0
67:									
Tenno, very stony surface--	0-8	45	42	8-18	1.20-1.40	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	8-14	45	42	8-18	1.25-1.45	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	14-17	45	42	8-18	1.20-1.40	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	17-27	---	---	---	---	---	---	---	---
68:									
Tenno very stony surface--	0-8	45	42	8-18	1.20-1.40	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	8-14	45	42	8-18	1.25-1.45	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	14-17	45	42	8-18	1.20-1.40	0.6-2.0	0.11-0.13	0.0-2.9	0.5-1.0
	17-27	---	---	---	---	---	---	---	---
69:									
Trevino, stony surface--------	0-6	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	6-12	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	12-19	44	41	12-18	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.5-1.0
	19-29	---	---	---	---	---	---	---	---
Portino, stony surface--------	0-12	43	44	8-18	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
70:									
Roundknoll------	0-3	80	18	1-4	0.80-0.90	5.9-20.0	0.05-0.07	0.0-3.0	2.0-4.0
	3-10	80	18	1-4	0.80-0.90	5.9-20.0	0.04-0.06	0.0-3.0	2.0-4.0
	10-15	80	18	1-4	0.80-0.90	5.9-20.0	0.02-0.03	0.0-3.0	1.0-3.0
	15-20	80	18	1-4	1.00-1.25	5.9-20.0	0.03-0.04	0.0-3.0	1.0-3.0
	20-30	80	18	1-4	1.15-1.25	5.9-20.0	0.02-0.03	0.0-3.0	0.5-1.0
	30-60	90	10	0-2	1.15-1.25	5.9-20.0	0.01-0.02	0.0-3.0	0.5-1.0
71:									
Soen------------	0-7	35	33	28-35	1.30-1.50	0.2-0.6	0.19-0.21	3.0-5.9	1.0-3.0
	7-22	7	54	35-50	1.40-1.60	0.1-0.2	0.19-0.21	6.0-8.9	0.5-1.0
	22-60	26	54	15-25	1.40-1.60	0.2-0.6	0.17-0.21	3.0-5.9	0.0-0.5
72:									
Splittop--------	0-3	41	37	18-25	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0
	3-26	19	57	20-27	1.20-1.40	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0
	26-32	39	37	20-27	1.20-1.40	0.6-2.0	0.06-0.12	0.0-2.9	0.0-0.5
	32-42	---	---	---	---	---	---	---	---
Atomic----------	0-15	40	38	18-27	1.25-1.35	0.6-2.0	0.16-0.19	3.0-5.9	1.0-2.0
	15-34	40	38	18-27	1.30-1.40	0.6-2.0	0.16-0.21	3.0-5.9	0.5-1.0
	34-46	40	38	18-27	1.35-1.45	0.6-2.0	0.12-0.17	3.0-5.9	0.0-0.5
	46-56	---	---	---	---	---	---	---	---
73:									
Starbuck--------	0-3	32	56	10-14	1.25-1.45	0.6-2.0	0.10-0.13	0.0-2.9	0.7-2.0
	3-12	30	54	14-18	1.30-1.50	0.6-2.0	0.16-0.18	0.0-2.9	0.0-0.5
	12-22	---	---	---	---	---	---	---	---
74:									
Starbuck--------	0-3	29	53	15-20	1.30-1.45	0.6-2.0	0.14-0.18	0.0-2.9	0.7-1.0
	3-10	30	54	14-18	1.30-1.50	0.6-2.0	0.13-0.18	0.0-2.9	0.0-0.5
	10-14	30	54	14-18	1.30-1.50	0.6-2.0	0.13-0.18	0.0-2.9	0.0-0.5
	14-24	---	---	---	---	---	---	---	---
McPan-----------	0-6	11	67	18-25	1.20-1.50	0.6-2.0	0.14-0.20	0.0-2.9	1.0-2.0
	6-20	9	63	24-32	1.20-1.50	0.2-0.6	0.14-0.20	3.0-5.9	0.5-1.0
	20-27	33	44	20-26	1.25-1.60	0.6-2.0	0.13-0.20	0.0-2.9	0.0-0.5
	27-29	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	29-39	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
75:									
Sunsetcone------	0-1	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	1-2	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	2-6	45	45	8-15	0.70-0.80	2.0-5.9	0.05-0.06	0.0-3.0	2.0-4.0
	6-8	45	45	8-12	0.70-0.80	2.0-5.9	0.05-0.07	0.0-3.0	1.0-2.0
	8-12	45	45	8-12	0.80-0.90	2.0-5.9	0.04-0.05	0.0-3.0	1.0-2.0
	12-26	60	35	4-6	0.80-0.90	2.0-5.9	0.04-0.05	0.0-3.0	0.5-1.0
	26-32	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
	32-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
76:									
Sunsetcone------	0-1	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	1-2	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	2-6	45	45	8-15	0.70-0.80	2.0-5.9	0.05-0.06	0.0-3.0	2.0-4.0
	6-8	45	45	8-12	0.70-0.80	2.0-5.9	0.05-0.07	0.0-3.0	1.0-2.0
	8-12	45	45	8-12	0.80-0.90	2.0-5.9	0.04-0.05	0.0-3.0	1.0-2.0
	12-26	60	35	4-6	0.80-0.90	2.0-5.9	0.04-0.05	0.0-3.0	0.5-1.0
	26-32	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
	32-60	100	0	0-1	1.50-1.70	20.0-99.9	0.00-0.02	0.0-2.9	0.0-0.0
Grassycone------	0-1	35	50	0-25	0.10-0.30	5.9-99.9	0.30-0.60	---	60-95
	1-3	65	31	2-6	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	2.0-6.0
	3-9	64	31	4-6	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	1.0-4.0
	9-57	70	22	6-10	0.65-0.85	5.9-20.0	0.20-0.25	0.0-2.9	1.0-2.0
	57-65	31	43	24-30	1.05-1.20	0.6-2.0	0.10-0.12	0.0-2.9	0.0-0.5
77:									
Taunton---------	0-5	29	53	15-20	1.25-1.45	0.6-2.0	0.17-0.20	0.0-2.9	0.7-1.0
	5-32	46	40	10-18	1.25-1.45	0.6-2.0	0.11-0.18	0.0-2.9	0.0-0.5
	32-44	---	---	---	---	0.0-0.1	0.00-0.00	---	---
	44-54	---	---	---	---	---	---	---	---
Paulville-------	0-6	42	38	16-24	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0
	6-30	20	51	18-31	1.30-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5
	30-50	33	54	10-15	1.30-1.45	0.6-2.0	0.15-0.17	0.0-2.9	0.0-0.5
	50-64	78	14	5-10	1.50-1.65	2.0-6.0	0.11-0.13	0.0-2.9	0.0-0.5
78:									
Techick---------	0-4	44	41	10-20	1.25-1.50	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	4-12	34	37	25-35	1.35-1.60	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	12-25	34	37	25-35	1.35-1.60	0.2-0.6	0.19-0.21	3.0-5.9	1.0-2.0
	25-46	44	41	10-20	1.45-1.65	0.6-2.0	0.16-0.18	0.0-2.9	0.5-1.0
	46-60	97	2	0-3	1.45-1.65	20.0-99.9	0.02-0.05	0.0-2.9	0.0-0.5

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
78:									
Soelberg--------	0-10	41	37	18-25	1.15-1.30	0.6-2.0	0.15-0.19	0.0-2.9	1.0-3.0
	10-28	34	37	25-34	1.20-1.40	0.2-0.6	0.15-0.19	3.0-5.9	1.0-2.0
	28-36	40	46	10-18	1.40-1.60	0.6-2.0	0.09-0.12	0.0-2.9	0.5-1.0
	36-40	82	18	0-2	1.20-1.40	20.0-99.9	0.01-0.03	0.0-2.9	0.0-0.5
	40-60	98	2	0-2	1.20-1.40	20.0-99.9	0.01-0.03	0.0-2.9	0.0-0.5
Lesbut----------	0-3	43	40	12-22	1.10-1.20	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0
	3-13	43	40	12-22	1.10-1.20	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0
	13-19	55	32	8-18	1.15-1.30	0.6-2.0	0.09-0.15	0.0-2.9	1.0-2.0
	19-60	81	16	0-5	1.20-1.40	20.0-20.0	0.01-0.04	0.0-2.9	0.0-0.5
79:									
Techicknot------	0-4	40	38	20-25	1.25-1.30	0.6-2.0	0.15-0.18	0.0-2.9	1.0-2.0
	4-29	36	34	25-35	1.30-1.40	0.2-2.0	0.16-0.21	3.0-5.9	1.0-2.0
	29-48	35	39	22-35	1.40-1.50	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	48-60	24	51	20-30	1.40-1.50	0.2-2.0	0.16-0.21	0.0-2.9	0.0-0.5
Atom------------	0-3	10	68	18-27	1.15-1.35	0.6-2.0	0.19-0.21	3.0-5.9	1.0-2.0
	3-10	7	61	18-35	1.15-1.35	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	10-60	9	65	25-35	1.20-1.35	0.2-0.6	0.09-0.13	3.0-5.9	0.0-0.5
Nargon----------	0-5	42	37	17-25	1.20-1.40	0.6-2.0	0.17-0.19	0.0-2.9	1.0-2.0
	5-15	36	36	20-30	1.20-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0
	15-22	41	37	18-25	1.20-1.40	0.2-0.6	0.17-0.21	0.0-2.9	0.0-0.5
	22-32	---	---	---	---	---	---	---	---
80:									
Treemold--------	0-2	50	40	6-12	0.80-0.90	0.6-2.0	0.10-0.12	0.0-3.0	2.0-4.0
	2-9	60	30	6-12	0.80-0.90	0.6-2.0	0.09-0.10	0.0-3.0	1.0-2.0
	9-60	---	---	---	---	---	---	---	---
Silentcone------	0-4	50	40	6-12	0.80-0.90	0.6-2.0	0.10-0.12	0.0-3.0	2.0-4.0
	4-10	50	42	4-10	0.80-0.90	0.6-2.0	0.10-0.12	0.0-3.0	2.0-4.0
	10-24	50	42	4-10	0.80-0.90	0.6-2.0	0.09-0.10	0.0-3.0	1.0-2.0
	24-48	---	---	---	---	---	---	---	---
81:									
Trevino, stony surface--------	0-6	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	6-12	44	41	12-18	1.40-1.55	0.6-2.0	0.16-0.18	0.0-2.9	1.0-3.0
	12-19	44	41	12-18	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	0.5-1.0
	19-29	---	---	---	---	---	---	---	---

Table 25.--Physical Soil Properties--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*In/hr*	*In/In*	*Pct*	*Pct*
81:									
Portino, stony surface	0-12	43	44	8-18	1.30-1.50	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0
	12-34	14	73	8-18	1.40-1.60	0.6-2.0	0.17-0.21	0.0-2.9	0.0-0.5
	34-44	---	---	---	---	---	---	---	---
82:									
Vining	0-6	63	26	6-15	1.35-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.7-1.0
	6-20	67	20	7-18	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.0-0.5
	20-24	74	19	4-10	1.25-1.40	6.0-20.0	0.07-0.10	0.0-2.9	0.0-0.2
	24-34	---	---	---	---	---	---	---	---
Kecko	0-5	78	16	3-8	1.40-1.60	5.9-20.0	0.08-0.10	0.0-2.9	0.5-1.0
	5-30	66	20	10-18	1.25-1.50	2.0-6.0	0.13-0.15	0.0-2.9	0.0-0.5
	30-60	55	31	10-18	1.20-1.40	0.6-2.0	0.16-0.18	0.0-2.9	0.0-0.5
83:									
Vining	0-5	63	26	6-15	1.35-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.7-1.0
	5-25	67	20	7-18	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.0-0.5
	25-35	---	---	---	---	---	---	---	---
Wapi	0-5	79	16	2-8	1.40-1.60	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.5
	5-19	79	16	2-8	1.40-1.60	6.0-20.0	0.06-0.08	0.0-2.9	0.4-1.0
	19-29	---	---	---	---	---	---	---	---
84:									
Vitale	0-3	43	38	12-25	1.30-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-3.0
	3-10	38	36	24-30	1.40-1.50	0.6-2.0	0.05-0.07	3.0-5.9	1.0-3.0
	10-19	33	36	25-35	1.40-1.50	0.1-0.2	0.05-0.07	3.0-5.9	1.0-3.0
	19-24	33	36	25-35	1.40-1.50	0.1-0.2	0.05-0.07	3.0-5.9	1.0-3.0
	24-33	41	37	18-25	1.40-1.55	0.6-2.0	0.05-0.07	0.0-2.9	0.0-1.0
	33-43	---	---	---	---	---	---	---	---
Blackspar	0-2	44	41	10-20	1.35-1.55	0.6-2.0	0.05-0.07	0.0-2.9	1.0-2.0
	2-6	44	41	10-20	1.35-1.55	0.6-2.0	0.05-0.07	0.0-2.9	1.0-2.0
	6-12	38	36	20-30	1.40-1.60	0.6-2.0	0.04-0.06	0.0-2.9	0.5-1.0
	12-22	---	---	---	---	---	---	---	---

Table 26.--Erosive Soil Properties

(Entries under "Erosion factors" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
1:						
Bancroft	0-6	.37	.37	5	5	56
	6-12	.43	.43			
	12-15	.43	.43			
	15-26	.43	.43			
	26-48	.43	.43			
	48-60	.43	.43			
2:						
Bancroft	0-11	.37	.37	5	5	56
	11-40	.43	.43			
	40-80	.32	.55			
3:						
Bigcinder	0-2	.24	.24	3	2	134
	2-6	.10	.20			
	6-10	.10	.24			
	10-20	.02	.10			
	20-24	.05	.24			
	24-30	.10	.28			
	30-60	.02	.10			
3A:						
Bigcinder	0-2	.24	.24	3	2	134
	2-6	.10	.20			
	6-10	.10	.24			
	10-20	.02	.10			
	20-24	.05	.24			
	24-30	.10	.28			
	30-60	.02	.10			
4:						
Blackspar	0-7	.10	.32	1	7	38
	7-17	.05	.32			
	17-27	---	---			
Rock outcrop	0-60	---	---	---	---	---
5:						
Bringmee	0-15	.28	.28	4	6	48
	15-34	.32	.32			
	34-47	.28	.28			
	47-61	.15	.28			
Hutton	0-4	.32	.32	5	6	48
	4-19	.32	.32			
	19-62	.24	.24			
6:						
Carey Lake	0-12	.32	.32	5	5	56
	12-20	.37	.37			
	20-47	.32	.32			
	47-72	.43	.43			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
7:						
Cinder land	0-60	---	---	---	---	---
Northcrater	0-4	.05	.17	5	2	134
	4-8	.05	.24			
	8-12	.05	.28			
	12-20	.10	.24			
	20-30	.05	.24			
	30-60	.05	.20			
8:						
Cox	0-3	.05	.17	1	6	48
	3-12	.05	.20			
	12-22	---	---			
Rehfield	0-11	.24	.24	4	3	86
	11-23	.24	.24			
	23-42	.24	.24			
	42-67	.15	.15			
Rock outcrop	0-60	---	---	---	---	---
9:						
Deerhorn	0-9	.24	.24	2	3	86
	9-17	.37	.37			
	17-21	.49	.49			
	21-24	---	---			
	24-34	---	---			
Rehfield	0-11	.24	.24	4	3	86
	11-23	.24	.24			
	23-42	.24	.24			
	42-67	.15	.15			
Rock outcrop	0-60	---	---	---	---	---
10:						
Deerhorn	0-9	.24	.24	2	3	86
	9-17	.37	.37			
	17-21	.49	.49			
	21-24	---	---			
	24-34	---	---			
Wildors	0-10	.05	.17	2	6	48
	10-15	.20	.49			
	15-22	.10	.49			
	22-24	---	---			
	24-34	---	---			
11:						
Deerhorn	0-9	.24	.24	2	3	86
	9-17	.37	.37			
	17-21	.49	.49			
	21-28	---	---			
	28-38	---	---			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
11:						
Wildors	0-9	.05	.17	2	6	48
	9-15	.10	.49			
	15-21	.10	.49			
	21-24	---	---			
	24-34	---	---			
Rekima	0-3	.10	.32	1	6	48
	3-15	.15	.37			
	15-18	.10	.37			
	18-19	---	---			
	19-29	---	---			
12:						
Deuce	0-2	.28	.43	1	7	38
	2-6	.43	.43			
	6-19	.43	.43			
	19-29	---	---			
Nargon	0-5	.43	.43	2	4L	86
	5-15	.32	.32			
	15-22	.24	.37			
	22-32	---	---			
Lava flows	0-60	---	---	---	---	---
13:						
Drage, cool	0-14	.17	.28	3	7	38
	14-30	.10	.32			
	30-61	.05	.20			
14:						
Drage, cool	0-16	.15	.32	5	7	38
	16-41	.10	.32			
	41-61	.05	.20			
15:						
Echocrater	0-3	.10	.15	3	2	134
	3-8	.10	.15			
	8-15	.10	.24			
	15-25	.10	.28			
	25-60	.02	.10			
16:						
Farmell	0-5	.49	.49	5	6	48
	5-8	.43	.43			
	8-16	.24	.24			
	16-36	.37	.37			
	36-56	.43	.43			
	56-80	.37	.37			
Power	0-10	.43	.43	5	6	48
	10-23	.49	.49			
	23-40	.43	.43			
	40-64	.55	.55			
Playas	0-60	.28	.28	---	4	86

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
17:						
Goodalfs	0-3	.43	.43	5	5	56
	3-10	.43	.43			
	10-24	.43	.43			
	24-40	.43	.43			
	40-60	.43	.43			
Craters	0-4	.10	.24	5	2	134
	4-10	.10	.32			
	10-22	.15	.37			
	22-38	.20	.37			
	38-60	.20	.37			
18:						
Goodington	0-10	.49	.49	3	6	48
	10-26	.32	.32			
	26-56	.43	.43			
	56-66	---	---			
Manard	0-11	.24	.37	2	7	38
	11-20	.37	.37			
	20-26	.24	.24			
	26-28	---	---			
	28-38	---	---			
19:						
Hal	0-6	.32	.49	4	2	134
	6-12	.37	.55			
	12-24	.43	.55			
	24-40	.43	.55			
	40-60	.02	.15			
Moonville	0-7	.43	.43	5	2	134
	7-15	.49	.49			
	15-31	.49	.49			
	31-60	.55	.55			
20:						
Howcan	0-4	.20	.28	3	6	48
	4-10	.05	.37			
	10-38	.05	.32			
	38-54	.02	.17			
	54-64	---	---			
Zeebar	0-3	.15	.28	4	7	38
	3-19	.20	.37			
	19-41	.10	.32			
	41-60	.05	.37			
Hutchley	0-4	.17	.32	1	7	38
	4-11	.10	.32			
	11-21	---	---			
21:						
Huddle	0-2	.32	.49	3	2	134
	2-7	.55	.55			
	7-19	.55	.55			
	19-39	.55	.55			
	39-50	.49	.49			
	50-60	---	---			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
21:						
Moonville	0-7	.43	.43	5	2	134
	7-15	.49	.49			
	15-31	.49	.49			
	31-60	.55	.55			
22:						
Hutton	0-4	.32	.32	5	6	48
	4-19	.32	.32			
	19-62	.24	.24			
23:						
Infernocone	0-5	.15	.24	3	2	134
	5-10	.15	.24			
	10-25	.20	.37			
	25-35	.10	.37			
	35-60	.02	.10			
24:						
Infernocone	0-5	.15	.24	3	2	134
	5-10	.15	.24			
	10-25	.20	.37			
	25-35	.10	.37			
	35-60	.02	.10			
25:						
Justesen	0-7	.32	.32	5	5	56
	7-24	.32	.32			
	24-62	.28	.28			
26:						
Justesen	0-7	.32	.32	5	5	56
	7-24	.32	.32			
	24-62	.28	.28			
27:						
Justesen	0-10	.32	.32	5	5	56
	10-25	.32	.32			
	25-60	.28	.28			
Drage	0-6	.20	.28	3	7	38
	6-15	.17	.28			
	15-30	.10	.32			
	30-43	.05	.32			
	43-60	.10	.37			
28:						
Lava flows	0-60	---	---	---	---	---
29:						
Lava flows	0-60	---	---	---	---	---
Cinderhurst	0-3	.05	.37	1	2	134
	3-8	.17	.49			
	8-18	---	---			
30:						
Lava flows	0-60	---	---	---	---	---

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
30:						
Cinderhurst, extremely shallow	0-2	.05	.37	1	2	134
	2-12	---	---			
31:						
Lavacreek	0-10	.20	.49	3	2	134
	10-19	.17	.55			
	19-36	.10	.55			
	36-42	.05	.28			
	42-59	.05	.28			
	59-69	---	---			
Dollarhide	0-8	.10	.37	1	7	38
	8-13	.15	.43			
	13-23	---	---			
32:						
Lavacreek	0-10	.20	.49	3	2	134
	10-19	.17	.55			
	19-36	.10	.55			
	36-42	.05	.28			
	42-59	.05	.28			
	59-69	---	---			
Dollarhide	0-7	.10	.37	1	7	38
	7-13	.15	.43			
	13-23	---	---			
33:						
Lavacreek, cold	0-10	.20	.49	3	2	134
	10-19	.17	.55			
	19-36	.10	.55			
	36-42	.05	.28			
	42-59	.05	.28			
	59-69	---	---			
Dollarhide, cold	0-7	.10	.37	1	7	38
	7-13	.15	.43			
	13-23	---	---			
34:						
Lavacreek	0-10	.20	.49	3	2	134
	10-19	.17	.55			
	19-36	.10	.55			
	36-42	.05	.28			
	42-59	.05	.28			
	59-69	---	---			
Dollarhide	0-8	.10	.37	1	7	38
	8-13	.15	.43			
	13-23	---	---			
Grassycone	0-1	---	---	4	2	134
	1-3	.20	.20			
	3-9	.17	.24			
	9-57	.10	.24			
	57-65	.15	.49			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
35:						
Lavacreek	0-10	.20	.49	3	2	134
	10-19	.17	.55			
	19-36	.10	.55			
	36-42	.05	.28			
	42-59	.05	.28			
	59-69	---	---			
Vitale	0-3	.10	.32	2	7	38
	3-10	.15	.37			
	10-19	.10	.32			
	19-24	.10	.32			
	24-33	.10	.37			
	33-43	---	---			
36:						
McBiggam	0-3	.49	.49	5	5	56
	3-10	.49	.49			
	10-15	.49	.49			
	15-26	.49	.49			
	26-36	.32	.32			
	36-46	.32	.32			
	46-80	.43	.43			
37:						
McCarey	0-11	.37	.37	2	5	56
	11-18	.32	.32			
	18-28	.43	.43			
	28-38	---	---			
Beartrap	0-16	.37	.37	3	4L	86
	16-52	.32	.32			
	52-62	---	---			
38:						
McCarey	0-11	.37	.37	2	5	56
	11-18	.32	.32			
	18-28	.43	.43			
	28-38	---	---			
Beartrap	0-16	.37	.37	3	4L	86
	16-52	.32	.32			
	52-62	---	---			
39:						
McCarey	0-11	.37	.37	2	5	56
	11-18	.32	.32			
	18-28	.43	.43			
	28-38	---	---			
Beartrap	0-16	.37	.37	3	4L	86
	16-52	.32	.32			
	52-62	---	---			
Rock outcrop	0-60	---	---	---	---	---

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
40:						
McCarey	0-10	.37	.37	2	5	56
	10-22	.32	.32			
	22-37	.43	.43			
	37-47	---	---			
Justesen	0-14	.32	.32	5	5	56
	14-31	.32	.32			
	31-64	.37	.37			
41:						
McCarey	0-10	.37	.37	2	5	56
	10-22	.32	.32			
	22-37	.43	.43			
	37-47	---	---			
Molyneux	0-13	.37	.37	5	5	56
	13-50	.32	.32			
	50-75	.17	.28			
42:						
McCarey	0-11	.37	.37	2	5	56
	11-18	.32	.32			
	18-28	.43	.43			
	28-38	---	---			
Molyneux	0-13	.37	.37	5	5	56
	13-62	.37	.37			
Rock outcrop	0-60	---	---	---	---	---
43:						
McCarey	0-10	.37	.37	2	5	56
	10-22	.32	.32			
	22-37	.43	.43			
	37-47	---	---			
Pedleford	0-5	.10	.32	2	7	38
	5-13	.15	.43			
	13-29	.15	.55			
	29-33	.10	.43			
	33-43	---	---			
44:						
McCarey	0-11	.37	.37	2	5	56
	11-18	.32	.32			
	18-28	.43	.43			
	28-38	---	---			
Pedleford	0-6	.10	.32	2	7	38
	6-26	.15	.43			
	26-34	.15	.55			
	34-44	---	---			
45:						
McCarey	0-5	.37	.37	2	5	56
	5-22	.32	.32			
	22-35	.43	.43			
	35-45	---	---			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
45:						
Rock outcrop	0-60	---	---	---	---	---
46:						
McCarey	0-12	.49	.49	2	5	56
	12-18	.32	.32			
	18-33	.43	.43			
	33-43	---	---			
Splittop	0-4	.49	.49	2	6	48
	4-30	.49	.49			
	30-40	---	---			
Lava flows	0-60	---	---	---	---	---
47:						
McPan	0-6	.43	.43	2	6	48
	6-20	.49	.49			
	20-27	.37	.55			
	27-29	---	---			
	29-39	---	---			
Chijer	0-6	.49	.49	5	3	86
	6-11	.55	.55			
	11-61	.55	.55			
48:						
Molyneux	0-13	.37	.37	5	5	56
	13-50	.32	.32			
	50-75	.17	.28			
49:						
Nargon	0-5	.37	.37	2	4L	86
	5-15	.32	.32			
	15-22	.24	.37			
	22-32	---	---			
Atom	0-3	.49	.49	5	4L	86
	3-10	.43	.43			
	10-60	.49	.49			
Techicknot	0-4	.32	.32	5	6	48
	4-29	.28	.28			
	29-48	.37	.37			
	48-60	.43	.43			
50:						
Nargon	0-2	.43	.43	2	4L	86
	2-7	.32	.32			
	7-11	.37	.37			
	11-21	.24	.37			
	21-31	---	---			
Deuce	0-2	.28	.43	1	7	38
	2-6	.43	.43			
	6-19	.43	.43			
	19-29	---	---			
Lava flows	0-60	---	---	---	---	---

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
51:						
Neeley	0-10	.49	.49	5	5	56
	10-16	.55	.55			
	16-60	.64	.64			
Hodad	0-7	.49	.49	2	5	56
	7-17	.55	.55			
	17-36	.55	.55			
	36-46	---	---			
52:						
Pagari	0-11	.05	.17	3	6	48
	11-17	.10	.24			
	17-31	.10	.37			
	31-46	.05	.37			
	46-56	---	---			
Rehfield	0-10	.20	.20	4	2	134
	10-42	.20	.20			
	42-67	.15	.15			
53:						
Paulville	0-6	.32	.32	5	6	48
	6-30	.43	.43			
	30-50	.55	.55			
	50-64	.28	.28			
McPan	0-6	.43	.43	2	6	48
	6-20	.49	.49			
	20-27	.37	.55			
	27-29	---	---			
	29-39	---	---			
Starbuck	0-4	.37	.37	1	3	86
	4-17	.49	.49			
	17-27	---	---			
54:						
Playas	0-60	.28	.28	---	4	86
55:						
Portino	0-12	.55	.55	2	4L	86
	12-34	.55	.55			
	34-44	---	---			
56:						
Portino	0-12	.55	.55	2	4L	86
	12-34	.55	.55			
	34-44	---	---			
57:						
Portino, stony surface	0-12	.37	.49	2	5	56
	12-34	.55	.55			
	34-44	---	---			
58:						
Portino, stony surface	0-12	.37	.49	2	5	56
	12-34	.55	.55			
	34-44	---	---			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
59:						
Portino, stony surface	0-12	.37	.49	2	5	56
	12-34	.55	.55			
	34-44	---	---			
Trevino, stony surface	0-6	.20	.32	1	6	48
	6-12	.20	.32			
	12-19	.24	.43			
	19-29	---	---			
Rock outcrop	0-60	---	---	---	---	---
60:						
Portneuf, bedrock substratum	0-15	.49	.49	3	5	56
	15-57	.64	.64			
	57-67	---	---			
61:						
Portneuf, bedrock substratum	0-15	.49	.49	3	5	56
	15-57	.64	.64			
	57-67	---	---			
62:						
Portneuf, bedrock substratum	0-15	.49	.49	3	5	56
	15-57	.64	.64			
	57-67	---	---			
63:						
Portneuf	0-10	.37	.37	5	3	86
	10-34	.64	.64			
	34-60	.64	.64			
Quincy	0-10	.10	.10	5	1	250
	10-60	.15	.15			
64:						
Povey	0-14	.17	.28	3	6	48
	14-35	.15	.37			
	35-60	.05	.43			
	60-70	---	---			
Dollarhide	0-7	.10	.37	1	7	38
	7-13	.15	.43			
	13-23	---	---			
65:						
Quincy	0-24	.10	.10	5	1	250
	24-69	.32	.32			
Walco	0-13	.10	.10	2	1	250
	13-21	.32	.32			
	21-31	---	---			
66:						
Rehfield	0-12	.20	.20	4	2	134
	12-40	.20	.20			
	40-61	.15	.15			
67:						
Rock outcrop	0-60	---	---	---	---	---

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
67:						
Tenno, very stony surface	0-8	.43	.43	1	5	56
	8-14	.43	.43			
	14-17	.28	.43			
	17-27	---	---			
68:						
Rock outcrop	0-60	---	---	---	---	---
Tenno, very stony surface	0-8	.43	.43	1	5	56
	8-14	.43	.43			
	14-17	.28	.43			
	17-27	---	---			
69:						
Rock outcrop	0-60	---	---	---	---	---
Trevino, stony surface	0-6	.20	.32	1	6	48
	6-12	.20	.32			
	12-19	.24	.43			
	19-29	---	---			
Portino, stony surface	0-12	.37	.49	2	5	56
	12-34	.55	.55			
	34-44	---	---			
70:						
Roundknoll	0-3	.10	.15	5	2	134
	3-10	.10	.20			
	10-15	.05	.24			
	15-20	.05	.24			
	20-30	.05	.28			
	30-60	.02	.15			
71:						
Soen	0-7	.32	.32	5	6	48
	7-22	.37	.37			
	22-60	.49	.49			
72:						
Splittop	0-3	.49	.49	2	6	48
	3-26	.49	.49			
	26-32	.49	.49			
	32-42	---	---			
Atomic	0-15	.28	.28	3	4L	86
	15-34	.37	.37			
	34-46	.20	.37			
	46-56	---	---			
73:						
Starbuck	0-3	.15	.43	1	7	38
	3-12	.49	.49			
	12-22	---	---			
Lava flows	0-60	---	---	---	---	---

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
74:						
Starbuck	0-3	.37	.37	1	5	56
	3-10	.49	.49			
	10-14	.49	.49			
	14-24	---	---			
McPan	0-6	.43	.43	2	6	48
	6-20	.49	.49			
	20-27	.37	.55			
	27-29	---	---			
	29-39	---	---			
Rock outcrop	0-60	---	---	---	---	---
75:						
Sunsetcone	0-1	---	---	3	2	134
	1-2	---	---			
	2-6	.24	.37			
	6-8	.32	.49			
	8-12	.24	.55			
	12-26	.17	.37			
	26-32	.02	.10			
	32-60	.02	.10			
76:						
Sunsetcone	0-1	---	---	3	2	134
	1-2	---	---			
	2-6	.24	.37			
	6-8	.32	.49			
	8-12	.24	.55			
	12-26	.17	.37			
	26-32	.02	.10			
	32-60	.02	.10			
Grassycone	0-1	---	---	4	2	134
	1-3	.20	.20			
	3-9	.17	.24			
	9-57	.10	.24			
	57-65	.15	.49			
77:						
Taunton	0-5	.49	.49	2	5	56
	5-32	.43	.43			
	32-44	---	---			
	44-54	---	---			
Paulville	0-6	.32	.32	5	6	48
	6-30	.43	.43			
	30-50	.55	.55			
	50-64	.28	.28			
78:						
Techick	0-4	.37	.37	4	5	56
	4-12	.32	.32			
	12-25	.32	.32			
	25-46	.43	.43			
	46-60	.02	.05			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
78:						
Soelberg	0-10	.28	.28	3	6	48
	10-28	.32	.32			
	28-36	.20	.43			
	36-40	.05	.20			
	40-60	.02	.05			
Lesbut	0-3	.24	.37	2	6	48
	3-13	.24	.37			
	13-19	.10	.32			
	19-60	.05	.24			
79:						
Techicknot	0-4	.32	.32	5	6	48
	4-29	.28	.28			
	29-48	.37	.37			
	48-60	.43	.43			
Atom	0-3	.49	.49	5	4L	86
	3-10	.43	.43			
	10-60	.49	.49			
Nargon	0-5	.37	.37	2	4L	86
	5-15	.32	.32			
	15-22	.24	.37			
	22-32	---	---			
80:						
Treemold	0-2	.15	.43	1	2	134
	2-9	.10	.32			
	9-60	---	---			
Silentcone	0-4	.15	.43	2	2	134
	4-10	.17	.43			
	10-24	.20	.55			
	24-48	---	---			
Lava flows	0-60	---	---	---	---	---
81:						
Trevino, stony surface	0-6	.20	.32	1	6	48
	6-12	.20	.32			
	12-19	.24	.43			
	19-29	---	---			
Portino, stony surface	0-12	.37	.49	2	5	56
	12-34	.55	.55			
	34-44	---	---			
Rock outcrop	0-60	---	---	---	---	---
82:						
Vining	0-6	.28	.28	2	3	86
	6-20	.28	.28			
	20-24	.24	.24			
	24-34	---	---			
Kecko	0-5	.32	.32	5	2	134
	5-30	.28	.28			
	30-60	.37	.37			

Table 26.--Erosive Soil Properties--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		Kw	Kf	T		
	In					
82:						
Rock outcrop	0-60	---	---	---	---	---
83:						
Vining	0-5	.28	.28	2	3	86
	5-25	.28	.28			
	25-35	---	---			
Wapi	0-5	.24	.24	1	2	134
	5-19	.32	.32			
	19-29	---	---			
Rock outcrop	0-60	---	---	---	---	---
84:						
Vitale	0-3	.10	.32	2	7	38
	3-10	.15	.37			
	10-19	.10	.32			
	19-24	.10	.32			
	24-33	.10	.37			
	33-43	---	---			
Blackspar	0-2	.10	.32	1	7	38
	2-6	.10	.32			
	6-12	.05	.32			
	12-22	---	---			
85:						
Water	---	---	---	---	---	---

Table 27.--Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
1:						
Bancroft	0-6	13-17	6.1-7.3	0	0	0
	6-12	13-17	6.1-7.3	0	0	0
	12-15	15-26	6.1-7.6	0	0	0
	15-26	15-26	6.1-7.6	0	0	0
	26-48	15-26	7.8-9.0	15-30	0	0
	48-60	15-26	7.8-9.0	15-30	0	0
2:						
Bancroft	0-11	13-17	6.1-7.3	0	0	0
	11-40	15-26	6.1-7.6	0	0	0
	40-80	4.1-15	7.8-9.0	5-25	0	0
3:						
Bigcinder	0-2	3.5-10	6.6-7.3	0	0	0
	2-6	3.5-10	6.6-7.3	0	0	0
	6-10	1.0-4.8	6.6-7.3	0	0	0
	10-20	0.0-0.2	6.6-7.3	0	0	0
	20-24	1.2-4.1	6.6-7.3	0	0	0
	24-30	0.4-3.0	6.6-7.3	0	0	0
	30-60	0.0-0.2	6.6-7.3	0	0	0
3A:						
Bigcinder	0-2	3.5-10	6.6-7.3	0	0	0
	2-6	3.5-10	6.6-7.3	0	0	0
	6-10	1.0-4.8	6.6-7.3	0	0	0
	10-20	0.0-0.2	6.6-7.3	0	0	0
	20-24	1.2-4.1	6.6-7.3	0	0	0
	24-30	0.4-3.0	6.6-7.3	0	0	0
	30-60	0.0-0.2	6.6-7.3	0	0	0
4:						
Blackspar	0-7	8.9-17	6.6-7.3	0	0	0
	7-17	16-24	6.6-7.3	0	0	0
	17-27	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
5:						
Bringmee	0-15	13-21	5.6-7.3	0	0	0
	15-34	16-27	6.1-7.3	0	0	0
	34-47	16-27	5.6-7.3	0	0	0
	47-61	0.0-12	6.1-7.3	0	0	0
Hutton	0-4	21-28	6.6-7.3	0	0	0
	4-19	23-31	6.6-7.3	0	0	0
	19-62	30-44	6.6-7.8	0	0	0
6:						
Carey Lake	0-12	11-16	6.6-7.3	0	0	0
	12-20	18-27	6.6-7.3	0	0	0
	20-47	12-22	6.6-7.3	0	0	0
	47-72	7.6-15	6.6-7.8	0	0	0
7:						
Cinder land	0-60	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
7:						
Northcrater	0-4	3.5-10	6.6-7.3	0	0	0
	4-8	3.5-10	6.6-7.3	0	0	0
	8-12	1.9-6.1	7.4-7.8	0	0	0
	12-20	1.9-6.1	7.4-7.8	0	0	0
	20-30	0.4-4.1	7.4-7.8	0	0	0
	30-60	0.4-4.1	7.4-7.8	0	0	0
8:						
Cox	0-3	7.3-13	6.1-7.3	0	0	0
	3-12	8.6-15	6.1-7.8	0	0	0
	12-22	---	---	---	---	---
Rehfield	0-11	3.9-9.1	6.6-7.3	0	0	0
	11-23	10-13	6.6-7.3	0	0	0
	23-42	13-21	6.6-7.3	0	0	0
	42-67	6.2-9.6	6.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
9:						
Deerhorn	0-9	8.9-13	6.1-7.6	0	0	0
	9-17	15-24	6.1-7.6	0	0	0
	17-21	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	21-24	---	---	---	---	---
	24-34	---	---	---	---	---
Rehfield	0-11	3.9-9.1	6.6-7.3	0	0	0
	11-23	10-13	6.6-7.3	0	0	0
	23-42	13-21	6.6-7.3	0	0	0
	42-67	6.2-9.6	6.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
10:						
Deerhorn	0-9	8.9-13	6.1-7.6	0	0	0
	9-17	15-24	6.1-7.6	0	0	0
	17-21	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	21-24	---	---	---	---	---
	24-34	---	---	---	---	---
Wildors	0-10	8.9-15	6.6-7.8	0-5	0	0
	10-15	6.2-16	7.4-8.2	0-5	0.0-2.0	0
	15-22	6.2-16	7.8-8.4	10-25	0.0-2.0	0
	22-24	---	---	---	---	---
	24-34	---	---	---	---	---
11:						
Deerhorn	0-9	8.9-13	6.1-7.6	0	0	0
	9-17	15-24	6.1-7.6	0	0	0
	17-21	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	21-28	---	---	---	---	---
	28-38	---	---	---	---	---
Wildors	0-9	8.9-15	6.6-7.8	0-5	0	0
	9-15	6.2-16	7.4-8.2	0-5	0.0-2.0	0
	15-21	6.2-16	7.8-8.4	10-25	0.0-2.0	0
	21-24	---	---	---	---	---
	24-34	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
11:						
Rekima	0-3	8.8-12	6.6-7.3	0	0	0
	3-15	7.6-12	6.6-7.3	0	0	0
	15-18	7.6-15	7.8-8.4	5-15	0.0-2.0	0
	18-19	---	---	---	---	---
	19-29	---	---	---	---	---
12:						
Deuce	0-2	13-21	7.6-8.4	3-10	0	0
	2-6	13-24	7.8-8.4	15-30	0.0-2.0	0
	6-19	15-25	7.9-8.4	20-35	0.0-2.0	0
	19-29	---	---	---	---	---
Nargon	0-5	15-21	7.6-8.4	3-15	0	0
	5-15	16-24	7.8-8.4	15-25	0.0-2.0	0-2
	15-22	13-20	8.0-8.4	15-30	0.0-2.0	0-2
	22-32	---	---	---	---	---
Lava flows	0-60	---	---	---	---	---
13:						
Drage, cool	0-14	13-21	6.6-7.6	0	0	0
	14-30	22-27	6.6-7.6	0	0	0
	30-61	7.6-20	7.8-8.4	10-30	0.0-2.0	0-5
14:						
Drage, cool	0-16	10-21	6.6-7.6	0	0	0
	16-41	22-28	6.6-7.6	0	0	0
	41-61	7.6-20	7.8-8.4	10-30	0.0-2.0	0-5
15:						
Echocrater	0-3	2.9-8.7	7.4-7.8	0	0	0
	3-8	2.9-8.7	7.4-7.8	0	0	0
	8-15	1.4-4.8	7.4-7.8	0	0	0
	15-25	0.8-3.0	7.4-7.8	0	0	0
	25-60	0.0-0.2	6.6-7.3	0	0	0
16:						
Farmell	0-5	16-20	6.6-7.6	0	0	0
	5-8	17-27	7.4-7.6	0	0	0
	8-16	30-40	7.4-7.6	0	0	0
	16-36	23-36	7.4-8.4	0	0	0
	36-56	18-29	7.8-8.4	15-40	0.0-2.0	0
	56-80	23-36	7.8-8.4	10-15	0.0-2.0	0
Power	0-10	15-19	6.6-7.8	0	0	0
	10-23	19-27	6.6-7.8	0	0.0-2.0	0
	23-40	15-25	7.8-8.4	15-25	0.0-2.0	0
	40-64	11-16	7.8-8.4	15-30	0.0-2.0	0
Playas	0-60	---	8.5-11.0	0	16.0-32.0	70-999
17:						
Goodalfs	0-3	5.8-14	6.6-7.3	0	0	0
	3-10	7.5-16	6.6-7.3	0	0	0
	10-24	15-20	6.6-7.3	0	0	0
	24-40	20-26	7.4-7.8	0	0	0
	40-60	16-21	7.4-7.8	0	0	0

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
17:						
Craters	0-4	5.2-12	6.6-7.3	0	0	0
	4-10	4.3-11	6.6-7.3	0	0	0
	10-22	5.3-13	6.6-7.3	0	0	0
	22-38	5.5-10	7.4-7.8	0	0	0
	38-60	6.5-9.3	7.4-7.8	0	0	0
18:						
Goodington	0-10	13-21	6.1-7.3	0	0	0
	10-26	29-40	6.6-7.6	0	0	0
	26-56	18-29	7.8-8.4	15-40	0.0-2.0	0-5
	56-66	---	---	---	---	---
Manard	0-11	17-22	6.1-7.3	0	0	0
	11-20	26-36	6.6-7.5	0	0	0
	20-26	29-43	7.8-8.4	3-10	0	0
	26-28	---	---	---	---	---
	28-38	---	---	---	---	---
19:						
Hal	0-6	5.5-13	6.1-7.3	0	0	0
	6-12	2.1-8.6	6.1-7.3	0	0	0
	12-24	2.2-8.6	6.6-7.3	0	0	0
	24-40	2.2-8.6	6.6-7.3	0	0	0
	40-60	0.8-6.4	6.6-7.3	0	0	0
Moonville	0-7	12-40	6.6-7.3	0	0	0
	7-15	8.0-15	6.6-7.3	0	0	0
	15-31	8.0-15	6.6-7.3	0	0	0
	31-60	5.3-12	7.9-8.4	5-20	0.0-2.0	0
20:						
Howcan	0-4	9.1-22	6.6-7.8	0	0	0
	4-10	8.9-21	6.6-7.8	0	0	0
	10-38	16-21	6.6-7.8	0	0	0
	38-54	11-19	6.6-7.8	0	0	0
	54-64	---	---	---	---	---
Zeebar	0-3	16-22	6.6-7.8	0	0	0
	3-19	15-22	6.6-7.8	0	0	0
	19-41	16-24	6.6-7.3	0	0	0
	41-60	11-20	6.6-7.8	0	0	0
Hutchley	0-4	13-21	6.6-7.8	0	0	0
	4-11	21-28	6.6-7.8	0	0	0
	11-21	---	---	---	---	---
21:						
Huddle	0-2	6.4-13	7.4-7.6	0	0	0
	2-7	6.4-13	7.4-7.6	0	0	0
	7-19	3.7-10	7.4-7.6	0	0	0
	19-39	3.8-11	7.8-8.4	15-35	0.0-2.0	0-8
	39-50	5.4-15	7.8-8.4	15-35	0.0-2.0	0-8
	50-60	---	---	---	---	---
Moonville	0-7	12-40	6.6-7.3	0	0	0
	7-15	8.0-15	6.6-7.3	0	0	0
	15-31	8.0-15	6.6-7.3	0	0	0
	31-60	5.3-12	7.9-8.4	5-20	0.0-2.0	0

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
22:						
Hutton	0-4	21-28	6.6-7.3	0	0	0
	4-19	23-31	6.6-7.3	0	0	0
	19-62	30-44	6.6-7.8	0	0	0
23:						
Infernocone	0-5	3.5-10	7.4-7.8	0	0	0
	5-10	3.5-10	7.4-7.8	0	0	0
	10-25	1.4-4.8	7.4-7.8	0	0	0
	25-35	0.8-3.0	7.4-7.8	0	0	0
	35-60	0.0-0.2	6.6-7.3	0	0	0
24:						
Infernocone	0-5	3.5-10	7.4-7.8	0	0	0
	5-10	3.5-10	7.4-7.8	0	0	0
	10-25	1.4-4.8	7.4-7.8	0	0	0
	25-35	0.8-3.0	7.4-7.8	0	0	0
	35-60	0.0-0.2	6.6-7.3	0	0	0
25:						
Justesen	0-7	10-16	6.6-7.3	0	0	0
	7-24	18-27	6.6-7.6	0	0	0
	24-62	11-16	7.9-8.4	15-35	0.0-2.0	0
26:						
Justesen	0-7	10-16	6.6-7.3	0	0	0
	7-24	18-27	6.6-7.6	0	0	0
	24-62	11-16	7.9-8.4	15-35	0.0-2.0	0
27:						
Justesen	0-10	10-16	6.6-7.3	0	0	0
	10-25	18-27	6.6-7.6	0	0	0
	25-60	11-16	7.9-8.4	15-35	0.0-2.0	0
Drage	0-6	15-22	6.6-7.6	0	0	0
	6-15	22-28	6.6-7.6	0	0	0
	15-30	23-27	6.6-7.6	0	0	0
	30-43	19-25	7.8-8.4	5-20	0.0-2.0	0
	43-60	11-21	7.8-8.4	15-25	0.0-2.0	0
28:						
Lava flows	0-60	---	---	---	---	---
29:						
Lava flows	0-60	---	---	---	---	---
Cinderhurst	0-3	11-20	6.1-7.3	0	0	0
	3-8	10-18	6.1-7.3	0	0	0
	8-18	---	---	---	---	---
30:						
Lava flows	0-60	---	---	---	---	---
Cinderhurst, extremely shallow	0-2	11-20	6.1-7.3	0	0	0
	2-12	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
31:						
Lavacreek	0-10	5.5-15	6.1-7.3	0	0	0
	10-19	5.5-13	6.1-7.3	0	0	0
	19-36	5.5-13	6.1-7.3	0	0	0
	36-42	3.7-7.9	5.6-7.3	0	0	0
	42-59	3.7-7.9	5.6-7.3	0	0	0
	59-69	---	---	---	---	---
Dollarhide	0-8	7.3-16	6.6-7.8	0	0	0
	8-13	7.1-15	6.6-7.8	0	0	0
	13-23	---	---	---	---	---
32:						
Lavacreek	0-10	5.5-15	6.1-7.3	0	0	0
	10-19	5.5-13	6.1-7.3	0	0	0
	19-36	5.5-13	6.1-7.3	0	0	0
	36-42	3.7-7.9	5.6-7.3	0	0	0
	42-59	3.7-7.9	5.6-7.3	0	0	0
	59-69	---	---	---	---	---
Dollarhide	0-7	7.3-16	6.6-7.8	0	0	0
	7-13	7.1-15	6.6-7.8	0	0	0
	13-23	---	---	---	---	---
33:						
Lavacreek, cold	0-10	5.5-15	6.1-7.3	0	0	0
	10-19	5.5-13	6.1-7.3	0	0	0
	19-36	5.5-13	6.1-7.3	0	0	0
	36-42	3.7-7.9	5.6-7.3	0	0	0
	42-59	3.7-7.9	5.6-7.3	0	0	0
	59-69	---	---	---	---	---
Dollarhide, cold	0-7	7.3-16	6.6-7.8	0	0	0
	7-13	7.1-15	6.6-7.8	0	0	0
	13-23	---	---	---	---	---
34:						
Lavacreek	0-10	5.5-15	6.1-7.3	0	0	0
	10-19	5.5-13	6.1-7.3	0	0	0
	19-36	5.5-13	6.1-7.3	0	0	0
	36-42	3.7-7.9	5.6-7.3	0	0	0
	42-59	3.7-7.9	5.6-7.3	0	0	0
	59-69	---	---	---	---	---
Dollarhide	0-8	7.3-16	6.6-7.8	0	0	0
	8-13	7.1-15	6.6-7.8	0	0	0
	13-23	---	---	---	---	---
Grassycone	0-1	---	4.5-5.5	0	0	0
	1-3	4.6-17	5.6-7.3	0	0	0
	3-9	3.8-12	5.6-7.3	0	0	0
	9-57	2.9-10	5.6-7.3	0	0	0
	57-65	6.0-15	6.6-7.3	0	0	0
35:						
Lavacreek	0-10	5.5-15	6.1-7.3	0	0	0
	10-19	5.5-13	6.1-7.3	0	0	0
	19-36	5.5-13	6.1-7.3	0	0	0
	36-42	3.7-7.9	5.6-7.3	0	0	0
	42-59	3.7-7.9	5.6-7.3	0	0	0
	59-69	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
35:						
Vitale	0-3	10-21	6.1-7.3	0	0	0
	3-10	20-25	6.6-7.8	0	0	0
	10-19	20-29	6.6-7.8	0	0	0
	19-24	20-29	6.6-7.8	0	0	0
	24-33	13-20	6.6-7.8	0	0	0
	33-43	---	---	---	---	---
36:						
McBiggam	0-3	8.9-13	6.1-7.3	0	0	0
	3-10	8.9-13	6.1-7.3	0	0	0
	10-15	18-25	6.6-7.5	0	0	0
	15-26	18-25	6.6-7.5	0	0	0
	26-36	26-38	6.6-7.5	0	0	0
	36-46	26-38	7.8-8.0	3-8	0.0-2.0	0
	46-80	20-30	8.0-8.4	3-8	0.0-2.0	0
37:						
McCarey	0-11	8.9-17	6.1-7.6	0	0	0
	11-18	17-28	6.1-7.6	0	0	0
	18-28	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	28-38	---	---	---	---	---
Beartrap	0-16	7.3-11	7.6-7.8	5-15	0	0
	16-52	10-15	7.8-8.8	15-40	0.0-2.0	0-5
	52-62	---	---	---	---	---
38:						
McCarey	0-11	8.9-17	6.1-7.6	0	0	0
	11-18	17-28	6.1-7.6	0	0	0
	18-28	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	28-38	---	---	---	---	---
Beartrap	0-16	7.3-11	7.6-7.8	5-15	0	0
	16-52	10-15	7.8-8.8	15-40	0.0-2.0	0-5
	52-62	---	---	---	---	---
39:						
McCarey	0-11	8.9-17	6.1-7.6	0	0	0
	11-18	17-28	6.1-7.6	0	0	0
	18-28	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	28-38	---	---	---	---	---
Beartrap	0-16	7.3-11	7.6-7.8	5-15	0	0
	16-52	10-15	7.8-8.8	15-40	0.0-2.0	0-5
	52-62	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
40:						
McCarey	0-10	8.9-17	6.1-7.6	0	0	0
	10-22	17-28	6.1-7.6	0	0	0
	22-37	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	37-47	---	---	---	---	---
Justesen	0-14	10-16	6.6-7.3	0	0	0
	14-31	18-27	6.6-7.6	0	0	0
	31-64	11-16	7.9-8.4	15-35	0.0-2.0	0

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
41:						
McCarey	0-10	8.9-17	6.1-7.6	0	0	0
	10-22	17-28	6.1-7.6	0	0	0
	22-37	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	37-47	---	---	---	---	---
Molyneux	0-13	8.9-17	6.1-7.3	0	0	0
	13-50	20-28	6.1-7.3	0	0	0
	50-75	16-24	6.1-7.8	0	0	0
42:						
McCarey	0-11	8.9-17	6.1-7.6	0	0	0
	11-18	17-28	6.1-7.6	0	0	0
	18-28	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	28-38	---	---	---	---	---
Molyneux	0-13	8.9-17	6.1-7.3	0	0	0
	13-62	20-28	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
43:						
McCarey	0-10	8.9-17	6.1-7.6	0	0	0
	10-22	17-28	6.1-7.6	0	0	0
	22-37	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	37-47	---	---	---	---	---
Pedleford	0-5	8.9-14	6.6-7.3	0	0	0
	5-13	11-16	6.6-7.6	0	0	0
	13-29	7.6-13	7.8-8.4	15-35	0.0-2.0	0
	29-33	9.4-13	7.8-8.4	15-35	0.0-2.0	0
	33-43	---	---	---	---	---
44:						
McCarey	0-11	8.9-17	6.1-7.6	0	0	0
	11-18	17-28	6.1-7.6	0	0	0
	18-28	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	28-38	---	---	---	---	---
Pedleford	0-6	8.9-14	6.6-7.3	0	0	0
	6-26	11-16	6.6-7.6	0	0	0
	26-34	7.6-13	7.8-8.4	15-35	0.0-2.0	0
	34-44	---	---	---	---	---
45:						
McCarey	0-5	8.9-17	6.1-7.6	0	0	0
	5-22	17-28	6.1-7.6	0	0	0
	22-35	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	35-45	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
46:						
McCarey	0-12	8.9-17	6.1-7.6	0	0	0
	12-18	17-28	6.1-7.6	0	0	0
	18-33	11-20	7.8-9.0	15-30	0.0-2.0	0-5
	33-43	---	---	---	---	---
Splittop	0-4	15-21	6.6-7.6	0	0	0
	4-30	16-22	7.8-8.4	15-20	0.0-2.0	0
	30-40	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
46:						
Lava flows	0-60	---	---	---	---	---
47:						
McPan	0-6	15-21	6.1-7.3	0	0	0
	6-20	19-25	7.6-7.8	0-10	0	0
	20-27	14-20	7.8-8.4	20-30	0.0-2.0	0
	27-29	---	---	---	---	---
	29-39	---	---	---	---	---
Chijer	0-6	7.1-15	6.6-7.6	0	0	0
	6-11	6.2-15	7.9-8.4	6-40	2.0-4.0	0-5
	11-61	6.2-11	7.9-8.4	16-40	2.0-8.0	0-5
48:						
Molyneux	0-13	8.9-17	6.1-7.3	0	0	0
	13-50	20-28	6.1-7.3	0	0	0
	50-75	16-24	6.1-7.8	0	0	0
49:						
Nargon	0-5	14-21	7.6-8.4	3-15	0	0
	5-15	16-24	7.8-8.4	15-25	0.0-2.0	0-2
	15-22	13-20	8.0-8.4	15-30	0.0-2.0	0-2
	22-32	---	---	---	---	---
Atom	0-3	15-22	7.4-8.4	0-10	0.0-2.0	0-5
	3-10	15-27	7.9-10.0	15-40	4.0-8.0	13-30
	10-60	17-27	8.5-10.0	15-40	8.0-16.0	13-30
Techicknot	0-4	17-21	7.4-7.7	0	0	0
	4-29	20-27	7.4-7.7	0	0	0
	29-48	18-27	7.8-8.4	15-30	0.0-2.0	0-5
	48-60	14-23	8.0-9.0	15-30	0.0-2.0	0-5
50:						
Nargon	0-2	15-21	7.6-8.4	3-15	0	0
	2-7	16-24	7.8-8.4	15-25	0.0-2.0	0-2
	7-11	13-27	8.0-8.4	15-30	0.0-2.0	0-2
	11-21	13-20	8.0-8.4	15-30	0.0-2.0	0-2
	21-31	---	---	---	---	---
Deuce	0-2	13-21	7.6-8.4	3-10	0	0
	2-6	13-24	7.8-8.4	15-30	0.0-2.0	0
	6-19	15-25	7.9-8.4	20-35	0.0-2.0	0
	19-29	---	---	---	---	---
Lava flows	0-60	---	---	---	---	---
51:						
Neeley	0-10	4.8-13	7.4-8.4	0-5	0.0-2.0	0-5
	10-16	5.6-16	7.4-9.0	0-30	0.0-2.0	5-20
	16-60	5.5-12	8.5-9.0	15-30	0.0-4.0	10-20
Hodad	0-7	7.3-16	7.4-8.4	0-5	0.0-2.0	0-10
	7-17	7.3-16	7.6-8.4	0-5	0.0-2.0	0-10
	17-36	6.2-15	7.8-8.4	15-30	0.0-2.0	0-10
	36-46	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
52:						
Pagari	0-11	8.9-13	6.6-7.3	0	0	0
	11-17	7.6-14	6.6-7.3	0	0	0
	17-31	13-23	7.0-7.6	0	0	0
	31-46	10-20	7.8-8.0	5-30	0.0-2.0	0
	46-56	---	---	---	---	---
Rehfield	0-10	3.9-9.1	6.6-7.3	0	0	0
	10-42	13-25	6.6-7.3	0	0	0
	42-67	6.2-9.6	6.6-7.3	0	0	0
53:						
Paulville	0-6	14-20	6.6-7.2	0	0	0
	6-30	13-24	7.4-7.6	0	0	0
	30-50	7.6-12	7.8-8.4	15-30	2.0-4.0	0-5
	50-64	4.1-8.6	7.6-8.4	1-5	2.0-4.0	0-5
McPan	0-6	15-21	6.1-7.3	0	0	0
	6-20	19-25	7.6-7.8	0-10	0	0
	20-27	14-20	7.8-8.4	20-30	0.0-2.0	0
	27-29	---	---	---	---	---
	29-39	---	---	---	---	---
Starbuck	0-4	8.8-14	6.6-7.3	0	0	0
	4-17	10-15	6.6-7.8	0	0	0
	17-27	---	---	---	---	---
54:						
Playas	0-60	---	8.5-11.0	0	16.0-32.0	70-999
55:						
Portino	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
56:						
Portino	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
57:						
Portino, stony surface	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
58:						
Portino, stony surface	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
59:						
Portino, stony surface	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
Trevino, stony surface	0-6	10-16	6.6-7.6	0	0	0
	6-12	10-16	6.6-7.6	0	0	0
	12-19	10-15	7.8-8.4	5-15	0.0-2.0	0-5
	19-29	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
59:						
Rock outcrop	0-60	---	---	---	---	---
60:						
Portneuf, bedrock substratum	0-15	7.3-16	7.4-7.8	0	0	0
	15-57	4.8-11	7.8-9.0	15-30	2.0-8.0	2-8
	57-67	---	---	---	---	---
61:						
Portneuf, bedrock substratum	0-15	7.3-16	7.4-7.8	0	0	0
	15-57	4.8-11	7.8-9.0	15-30	2.0-8.0	2-8
	57-67	---	---	---	---	---
62:						
Portneuf, bedrock substratum	0-15	7.3-16	7.4-7.8	0	0	0
	15-57	4.8-11	7.8-9.0	15-30	2.0-8.0	2-8
	57-67	---	---	---	---	---
63:						
Portneuf	0-10	4.7-13	7.4-7.8	1-15	0	0
	10-34	5.5-11	7.9-9.0	15-30	2.0-8.0	2-10
	34-60	4.1-10	7.9-9.0	15-30	2.0-8.0	2-10
Quincy	0-10	1.0-5.0	6.6-7.8	0	0	0
	10-60	0.8-5.4	7.4-7.8	2-5	0	0
64:						
Povey	0-14	9.1-17	6.6-7.3	0	0	0
	14-35	8.9-17	6.1-7.3	0	0	0
	35-60	7.1-13	6.6-7.8	0	0	0
	60-70	---	---	---	---	---
Dollarhide	0-7	7.3-16	6.6-7.8	0	0	0
	7-13	7.1-15	6.6-7.8	0	0	0
	13-23	---	---	---	---	---
65:						
Quincy	0-24	1.0-5.0	6.6-7.8	0	0	0
	24-69	1.0-5.7	7.4-7.8	2-5	0	0
Walco	0-13	0.0-4.2	6.6-7.3	0	0	0
	13-21	0.0-4.0	6.6-7.3	0	0	0
	21-31	---	---	---	---	---
66:						
Rehfield	0-12	3.9-9.1	6.6-7.3	0	0	0
	12-40	13-25	6.6-7.3	0	0	0
	40-61	6.2-9.6	6.6-7.3	0	0	0
67:						
Rock outcrop	0-60	---	---	---	---	---
Tenno, very stony surface	0-8	7.1-15	7.4-8.4	0	0.0-2.0	0-8
	8-14	7.1-15	7.4-8.4	0	0.0-2.0	0-8
	14-17	7.1-15	7.8-9.0	5-20	0.0-2.0	0-8
	17-27	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
68:						
Rock outcrop	0-60	---	---	---	---	---
Tenno, very stony surface	0-8	7.1-15	7.4-8.4	0	0.0-2.0	0-8
	8-14	7.1-15	7.4-8.4	0	0.0-2.0	0-8
	14-17	7.1-15	7.8-9.0	5-20	0.0-2.0	0-8
	17-27	---	---	---	---	---
69:						
Rock outcrop	0-60	---	---	---	---	---
Trevino, stony surface	0-6	10-16	6.6-7.6	0	0	0
	6-12	10-16	6.6-7.6	0	0	0
	12-19	10-15	7.8-8.4	5-15	0.0-2.0	0-5
	19-29	---	---	---	---	---
Portino, stony surface	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
70:						
Roundknoll	0-3	2.9-8.7	7.4-7.6	0	0	0
	3-10	2.9-8.7	7.4-7.6	0	0	0
	10-15	1.4-6.7	7.4-7.6	0	0	0
	15-20	1.4-6.7	7.8-8.0	15-20	0.0-2.0	0
	20-30	0.8-3.0	7.8-8.4	15-20	0.0-2.0	0
	30-60	0.4-1.9	7.8-8.4	15-20	0.0-2.0	0
71:						
Soen	0-7	22-28	6.6-7.6	0	0	0
	7-22	26-36	6.6-7.8	0	0	0
	22-60	11-20	7.8-8.4	15-25	0.0-2.0	0
72:						
Splittop	0-3	15-21	6.6-7.6	0	0	0
	3-26	16-22	7.8-8.4	15-20	0.0-2.0	0
	26-32	14-21	7.8-8.4	15-20	0.0-2.0	0
	32-42	---	---	---	---	---
Atomic	0-15	15-22	7.8-8.4	5-15	0.0-2.0	0
	15-34	15-22	7.8-9.0	6-40	0.0-2.0	5-13
	34-46	13-21	8.0-9.0	16-40	0.0-2.0	5-13
	46-56	---	---	---	---	---
73:						
Starbuck	0-3	8.8-12	6.6-7.3	0	0	0
	3-12	10-15	6.6-7.3	0	0	0
	12-22	---	---	---	---	---
Lava flows	0-60	---	---	---	---	---
74:						
Starbuck	0-3	13-17	6.6-7.3	0	0	0
	3-10	10-15	6.6-7.8	0	0	0
	10-14	10-15	6.6-7.8	0	0	0
	14-24	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
74:						
McPan	0-6	15-21	6.1-7.3	0	0	0
	6-20	19-25	7.6-7.8	0-10	0	0
	20-27	14-20	7.8-8.4	20-30	0.0-2.0	0
	27-29	---	---	---	---	---
	29-39	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
75:						
Sunsetcone	0-1	---	4.5-5.5	0	0	0
	1-2	---	4.5-5.5	0	0	0
	2-6	7.4-17	7.9-8.4	0	0	0
	6-8	5.4-10	7.9-8.4	0	0	0
	8-12	5.4-10	7.9-8.4	0	0	0
	12-26	2.2-4.1	7.9-8.4	0	0	0
	26-32	0.0-0.2	6.6-7.3	0	0	0
	32-60	0.0-0.2	6.6-7.3	0	0	0
76:						
Sunsetcone	0-1	---	4.5-5.5	0	0	0
	1-2	---	4.5-5.5	0	0	0
	2-6	7.4-17	7.9-8.4	0	0	0
	6-8	5.4-10	7.9-8.4	0	0	0
	8-12	5.4-10	7.9-8.4	0	0	0
	12-26	3.6-6.4	7.9-8.4	0	0	0
	26-32	0.0-0.2	6.6-7.3	0	0	0
	32-60	0.0-0.2	6.6-7.3	0	0	0
Grassycone	0-1	---	4.5-5.5	0	0	0
	1-3	4.6-17	5.6-7.3	0	0	0
	3-9	3.8-12	5.6-7.3	0	0	0
	9-57	2.9-10	5.6-7.3	0	0	0
	57-65	6.0-15	6.6-7.3	0	0	0
77:						
Taunton	0-5	13-17	6.6-7.6	0	0	0
	5-32	7.6-15	7.8-8.4	5-35	0.0-2.0	0
	32-44	---	---	---	---	---
	44-54	---	---	---	---	---
Paulville	0-6	14-20	6.6-7.2	0	0	0
	6-30	13-24	7.4-7.6	0	0	0
	30-50	7.6-12	7.8-8.4	15-30	2.0-4.0	0-5
	50-64	4.1-8.6	7.6-8.4	1-5	2.0-4.0	0-5
78:						
Techick	0-4	8.9-17	6.6-7.7	0	0	0
	4-12	20-27	7.4-7.7	0	0	0
	12-25	20-27	7.8-8.4	15-20	0	0
	25-46	8.6-17	7.8-8.4	15-25	0.0-2.0	0-1
	46-60	0.0-2.9	7.4-7.8	0	0	0
Soelberg	0-10	15-21	6.6-7.6	0	0	0
	10-28	20-27	7.4-7.8	0	0	0
	28-36	8.6-15	7.8-8.4	15-25	0	0
	36-40	0.0-2.0	7.8-8.4	15-25	0	0
	40-60	0.0-2.0	7.8-8.0	2-4	0	0

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
78:						
Lesbut	0-3	11-19	6.6-7.3	0	0	0
	3-13	11-19	6.6-7.3	0	0	0
	13-19	7.8-16	6.6-7.8	0-5	0	0
	19-60	0.0-3.8	7.6-7.8	1-5	0	0
79:						
Techicknot	0-4	17-21	7.4-7.6	0	0	0
	4-29	20-27	7.4-7.6	0	0	0
	29-48	18-27	7.8-8.4	15-30	0.0-2.0	0-5
	48-60	14-23	8.0-9.0	15-30	0.0-2.0	0-5
Atom	0-3	15-22	7.4-8.4	0-10	0.0-2.0	0-5
	3-10	15-27	7.9-10.0	15-40	4.0-8.0	13-30
	10-60	17-27	8.5-10.0	15-40	8.0-16.0	13-30
Nargon	0-5	14-21	7.6-8.4	3-15	0	0
	5-15	16-24	8.0-8.4	15-30	0.0-2.0	0-2
	15-22	13-20	8.0-8.4	15-30	0.0-2.0	0-2
	22-32	---	---	---	---	---
80:						
Treemold	0-2	6.1-15	6.1-6.5	0	0	0
	2-9	4.1-10	6.2-6.5	0	0	0
	9-60	15-25	---	---	---	---
Silentcone	0-4	6.1-15	6.6-7.3	0	0	0
	4-10	4.8-13	7.4-7.8	0	0	0
	10-24	3.0-8.8	7.4-7.8	0	0	0
	24-48	---	---	---	---	---
Lava flows	0-60	---	---	---	---	---
81:						
Trevino, stony surface	0-6	10-16	6.6-7.6	0	0	0
	6-12	10-16	6.6-7.6	0	0	0
	12-19	10-15	7.8-8.4	5-15	0.0-2.0	0-5
	19-29	---	---	---	---	---
Portino, stony surface	0-12	7.1-15	7.8-9.0	5-15	0.0-2.0	0-10
	12-34	6.2-15	7.8-9.0	15-30	0.0-2.0	2-13
	34-44	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
82:						
Vining	0-6	5.5-13	6.6-7.6	0	0	0
	6-20	5.5-15	6.6-7.6	0	0	0
	20-24	3.9-9.1	6.6-7.6	0	0	0
	24-34	---	---	---	---	---
Kecko	0-5	2.9-7.3	6.6-7.5	0	0	0
	5-30	7.6-15	6.6-7.5	0	0	0
	30-60	7.6-15	7.8-8.4	15-25	0.0-2.0	0-5
Rock outcrop	0-60	---	---	---	---	---

Table 27.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
83:						
Vining	0-5	5.5-13	6.6-7.6	0	0	0
	5-25	5.5-15	6.6-7.6	0	0	0
	25-35	---	---	---	---	---
Wapi	0-5	1.8-6.6	6.6-7.6	0	0	0
	5-19	1.8-6.4	6.6-7.8	0	0	0
	19-29	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
84:						
Vitale	0-3	10-21	6.1-7.3	0	0	0
	3-10	20-25	6.6-7.8	0	0	0
	10-19	20-29	6.6-7.8	0	0	0
	19-24	20-29	6.6-7.8	0	0	0
	24-33	13-20	6.6-7.8	0	0	0
	33-43	---	---	---	---	---
Blackspar	0-2	8.9-17	6.6-7.3	0	0	0
	2-6	8.9-17	6.6-7.3	0	0	0
	6-12	16-24	6.6-7.3	0	0	0
	12-22	---	---	---	---	---
85:						
Water	---	---	---	---	---	---

Table 28.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
1:									
Bancroft	B								
		Jan-Dec	---	---	---	---	None	---	None
2:									
Bancroft	B								
		Jan-Dec	---	---	---	---	None	---	None
3:									
Bigcinder	A								
		Jan-Dec	---	---	---	---	None	---	None
3A:									
Bigcinder	A								
		Jan-Dec	---	---	---	---	None	---	None
4:									
Blackspar	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
5:									
Bringmee	C								
		Jan-Dec	---	---	---	---	None	---	None
Hutton	D								
		April	1.0-2.5	>6.0	---	---	None	Brief	Frequent
		May	1.0-2.5	>6.0	---	---	None	Brief	Frequent
		June	1.0-2.5	>6.0	---	---	None	Brief	Frequent
6:									
Carey Lake	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
7:									
Cinder land	A	Jan-Dec	---	---	---	---	None	---	None
Northcrater	A	Jan-Dec	---	---	---	---	None	---	None
8:									
Cox	D	Jan-Dec	---	---	---	---	None	---	None
Rehfield	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
9:									
Deerhorn	C	Jan-Dec	---	---	---	---	None	---	None
Rehfield	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
10:									
Deerhorn	C	Jan-Dec	---	---	---	---	None	---	None
Wildors	C	Jan-Dec	---	---	---	---	None	---	None
11:									
Deerhorn	C	Jan-Dec	---	---	---	---	None	---	None
Wildors	C	Jan-Dec	---	---	---	---	None	---	None
Rekima	D	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
12:									
Deuce	D								
		Jan-Dec	---	---	---	---	None	---	None
Nargon	C								
		Jan-Dec	---	---	---	---	None	---	None
Lava flows	D								
		Jan-Dec	---	---	---	---	None	---	None
13:									
Drage, cool	C								
		Jan-Dec	---	---	---	---	None	---	None
14:									
Drage, cool	C								
		Jan-Dec	---	---	---	---	None	---	None
15:									
Echocrater	A								
16:									
Farmell	C								
		Jan-Dec	---	---	---	---	None	---	None
Power	C								
		Jan-Dec	---	---	---	---	None	---	None
Playas	D								
		January	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		July	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		August	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		September	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	1.0-6.0	>6.0	---	---	None	---	None
		November	1.0-6.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
17:									
Goodalfs	C								
		April	---	---	0.5-0.8	Brief	Occasional	---	None
		May	---	---	0.5-0.8	Brief	Occasional	---	None
Craters	B								
		Jan-Dec	---	---	---	---	None	---	None
18:									
Goodington	D								
		Jan-Dec	---	---	---	---	None	---	None
Manard	D								
		Jan-Dec	---	---	---	---	None	---	None
19:									
Hal	B								
		Jan-Dec	---	---	---	---	None	---	None
Moonville	B								
		Jan-Dec	---	---	---	---	None	---	None
20:									
Howcan	B								
		Jan-Dec	---	---	---	---	None	---	None
Zeebar	C								
		Jan-Dec	---	---	---	---	None	---	None
Hutchley	D								
		Jan-Dec	---	---	---	---	None	---	None
21:									
Huddle	B								
		Jan-Dec	---	---	---	---	None	---	None
Moonville	B								
		Jan-Dec	---	---	---	---	None	---	None
22:									
Hutton	D								
		April	1.0-2.5	>6.0	---	---	None	Brief	Frequent
		May	1.0-2.5	>6.0	---	---	None	Brief	Frequent
		June	1.0-2.5	>6.0	---	---	None	Brief	Frequent

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
23:									
Infernocone	A	Jan-Dec	---	---	---	---	None	---	None
24:									
Infernocone	A	Jan-Dec	---	---	---	---	None	---	None
25:									
Justesen	C	Jan-Dec	---	---	---	---	None	---	None
26:									
Justesen	C	Jan-Dec	---	---	---	---	None	---	None
27:									
Justesen	C	Jan-Dec	---	---	---	---	None	---	None
Drage	C	Jan-Dec	---	---	---	---	None	---	None
28:									
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
29:									
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
Cinderhurst	D	Jan-Dec	---	---	---	---	None	---	None
30:									
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
Cinderhurst, extremely shallow	D	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
31:									
Lavacreek	B	Jan-Dec	---	---	---	---	None	---	None
Dollarhide	D	Jan-Dec	---	---	---	---	None	---	None
32:									
Lavacreek	B	Jan-Dec	---	---	---	---	None	---	None
Dollarhide	D	Jan-Dec	---	---	---	---	None	---	None
33:									
Lavacreek, cold	B	Jan-Dec	---	---	---	---	None	---	None
Dollarhide, cold	D	Jan-Dec	---	---	---	---	None	---	None
34:									
Lavacreek	B	Jan-Dec	---	---	---	---	None	---	None
Dollarhide	D	Jan-Dec	---	---	---	---	None	---	None
Grassycone	A	Jan-Dec	---	---	---	---	None	---	None
35:									
Lavacreek	B	Jan-Dec	---	---	---	---	None	---	None
Vitale	D	Jan-Dec	---	---	---	---	None	---	None
36:									
McBiggam	C	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
37:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Beartrap	B	Jan-Dec	---	---	---	---	None	---	None
38:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Beartrap	B	Jan-Dec	---	---	---	---	None	---	None
39:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Beartrap	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
40:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Justesen	C	Jan-Dec	---	---	---	---	None	---	None
41:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Molyneux	C	Jan-Dec	---	---	---	---	None	---	None
42:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
42:									
Molyneux	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
43:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Pedleford	C	Jan-Dec	---	---	---	---	None	---	None
44:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Pedleford	C	Jan-Dec	---	---	---	---	None	---	None
45:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
46:									
McCarey	C	Jan-Dec	---	---	---	---	None	---	None
Splittop	C	Jan-Dec	---	---	---	---	None	---	None
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
47:									
McPan	C	Jan-Dec	---	---	---	---	None	---	None
Chijer	B	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
48:									
Molyneux	C								
		Jan-Dec	---	---	---	---	None	---	None
49:									
Nargon	C								
		Jan-Dec	---	---	---	---	None	---	None
Atom	C								
		Jan-Dec	---	---	---	---	None	---	None
Techicknot	C								
		Jan-Dec	---	---	---	---	None	---	None
50:									
Nargon	C								
		Jan-Dec	---	---	---	---	None	---	None
Deuce	D								
		Jan-Dec	---	---	---	---	None	---	None
Lava flows	D								
		Jan-Dec	---	---	---	---	None	---	None
51:									
Neeley	B								
		Jan-Dec	---	---	---	---	None	---	None
Hodad	C								
		Jan-Dec	---	---	---	---	None	---	None
52:									
Pagari	B								
		Jan-Dec	---	---	---	---	None	---	None
Rehfield	B								
		Jan-Dec	---	---	---	---	None	---	None
53:									
Paulville	C								
		Jan-Dec	---	---	---	---	None	---	None
McPan	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
53:									
Starbuck	D								
		Jan-Dec	---	---	---	---	None	---	None
54:									
Playas	D								
		January	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		July	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		August	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		September	1.0-6.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	1.0-6.0	>6.0	---	---	None	---	None
		November	1.0-6.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None
55:									
Portino	C								
		Jan-Dec	---	---	---	---	None	---	None
56:									
Portino	C								
		Jan-Dec	---	---	---	---	None	---	None
57:									
Portino, stony surface	C								
		Jan-Dec	---	---	---	---	None	---	None
58:									
Portino, stony surface	C								
		Jan-Dec	---	---	---	---	None	---	None
59:									
Portino, stony surface	C								
		Jan-Dec	---	---	---	---	None	---	None
Trevino, stony surface	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
60:									
Portneuf, bedrock substratum	B	Jan-Dec	---	---	---	---	None	---	None
61:									
Portneuf, bedrock substratum	B	Jan-Dec	---	---	---	---	None	---	None
62:									
Portneuf, bedrock substratum	B	Jan-Dec	---	---	---	---	None	---	None
63:									
Portneuf	C	Jan-Dec	---	---	---	---	None	---	None
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
64:									
Povey	B	Jan-Dec	---	---	---	---	None	---	None
Dollarhide	D	Jan-Dec	---	---	---	---	None	---	None
65:									
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
Walco	A	Jan-Dec	---	---	---	---	None	---	None
66:									
Rehfield	B	Jan-Dec	---	---	---	---	None	---	None
67:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Tenno, very stony surface	D	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
68:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Tenno, very stony surface	D	Jan-Dec	---	---	---	---	None	---	None
69:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Trevino, stony surface	D	Jan-Dec	---	---	---	---	None	---	None
Portino, stony surface	C	Jan-Dec	---	---	---	---	None	---	None
70:									
Roundknoll	A	Jan-Dec	---	---	---	---	None	---	None
71:									
Soen	C	Jan-Dec	---	---	---	---	None	---	None
72:									
Splittop	C	Jan-Dec	---	---	---	---	None	---	None
Atomic	B	Jan-Dec	---	---	---	---	None	---	None
73:									
Starbuck	D	Jan-Dec	---	---	---	---	None	---	None
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
74:									
Starbuck	D	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
74:									
McPan	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
75:									
Sunsetcone	A	Jan-Dec	---	---	---	---	None	---	None
76:									
Sunsetcone	A	Jan-Dec	---	---	---	---	None	---	None
Grassycone	A	Jan-Dec	---	---	---	---	None	---	None
77:									
Taunton	C	Jan-Dec	---	---	---	---	None	---	None
Paulville	C	Jan-Dec	---	---	---	---	None	---	None
78:									
Techick	C	Jan-Dec	---	---	---	---	None	---	None
Soelberg	C	Jan-Dec	---	---	---	---	None	---	None
Lesbut	B	Jan-Dec	---	---	---	---	None	---	None
79:									
Techicknot	C	Jan-Dec	---	---	---	---	None	---	None
Atom	C	Jan-Dec	---	---	---	---	None	---	None
Nargon	C	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
80:									
Treemold	D	Jan-Dec	---	---	---	---	None	---	None
Silentcone	C	Jan-Dec	---	---	---	---	None	---	None
Lava flows	D	Jan-Dec	---	---	---	---	None	---	None
81:									
Trevino, stony surface	D	Jan-Dec	---	---	---	---	None	---	None
Portino, stony surface	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
82:									
Vining	B	Jan-Dec	---	---	---	---	None	---	None
Kecko	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
83:									
Vining	B	Jan-Dec	---	---	---	---	None	---	None
Wapi	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
84:									
Vitale	D	Jan-Dec	---	---	---	---	None	---	None

Table 28.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
84:									
Blackspar	D	Jan-Dec	---	---	---	---	None	---	None
85:									
Water	---	---	---	---	---	---	---	---	---

Table 29.--Soil Features

(Miscellaneous land type components such as Lava flows and Rock outcrop are not shown in the table)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
1:							
Bancroft	None	---	---	---	High	Low	Low
2:							
Bancroft	None	---	---	---	High	Low	Low
3:							
Bigcinder	Strongly contrasting textural stratification	10-18	8-15	Noncemented	Moderate	High	Low
3A:							
Bigcinder	Strongly contrasting textural stratification	10-18	8-15	Noncemented	Moderate	High	Low
4:							
Blackspar	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
5:							
Bringmee	Strongly contrasting textural stratification	40-60	---	Noncemented	Moderate	Moderate	Low
Hutton	None	---	---	---	High	High	Low
6:							
Carey Lake	None	---	---	---	Moderate	Moderate	Low
7:							
Northcrater	None	---	---	---	Moderate	High	Low
8:							
Cox	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
Rehfield	Strongly contrasting textural stratification	40-60	---	Noncemented	Moderate	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
9:							
Deerhorn	Duripan	20-30	1-7	Indurated	Moderate	Moderate	Low
	Lithic bedrock	22-35		Indurated			
Rehfield	Strongly contrasting textural stratification	40-60	---	Noncemented	Moderate	Moderate	Low
10:							
Deerhorn	Duripan	20-30	1-7	Indurated	Moderate	Moderate	Low
	Lithic bedrock	22-35		Indurated			
Wildors	Duripan	21-28	1-4	Indurated	Moderate	Moderate	Low
	Lithic bedrock	23-30		Indurated			
11:							
Deerhorn	Duripan	20-30	1-7	Indurated	Moderate	Moderate	Low
	Lithic bedrock	22-35		Indurated			
Wildors	Duripan	21-28	1-4	Indurated	Moderate	Moderate	Low
	Lithic bedrock	23-30		Indurated			
Rekima	Duripan	14-19	1-2	Indurated	Moderate	Moderate	Low
	Lithic bedrock	15-20		Indurated			
12:							
Deuce	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
Nargon	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
13:							
Drage, cool	None	---	---	---	Moderate	Moderate	Low
14:							
Drage, cool	None	---	---	---	Moderate	Moderate	Low
15:							
Echocrater	Strongly contrasting textural stratification	20-35	---	Noncemented	Moderate	High	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
16:							
Farmell	None	---	---	---	Low	Moderate	Low
Power	None	---	---	---	Moderate	Low	Low
17:							
Goodalfs	None	---	---	---	Moderate	Moderate	Low
Craters	None	---	---	---	High	High	Low
18:							
Goodington	Lithic bedrock	40-60	---	Indurated	Moderate	Moderate	Low
Manard	Duripan	20-37	1-4	Indurated	Moderate	Moderate	Low
	Lithic bedrock	21-38		Indurated			
19:							
Hal	Strongly contrasting textural stratification	40-60	---	Noncemented	High	High	Low
Moonville	None	---	---	---	High	High	Low
20:							
Howcan	Lithic bedrock	40-60	---	Indurated	Moderate	Moderate	Low
Zeebar	None	---	---	---	Moderate	Moderate	Low
Hutchley	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
21:							
Huddle	Lithic bedrock	40-60	---	Indurated	High	High	Low
Moonville	None	---	---	---	High	High	Low
22:							
Hutton	None	---	---	---	High	High	Low
23:							
Infernocone	Strongly contrasting textural stratification	25-40	---	Noncemented	Moderate	High	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
24:							
Infernocone	Strongly contrasting textural stratification	25-40	---	Noncemented	Moderate	High	Low
25:							
Justesen	None	---	---	---	Moderate	Moderate	Low
26:							
Justesen	None	---	---	---	Moderate	Moderate	Low
27:							
Justesen	None	---	---	---	Moderate	Moderate	Low
Drage	None	---	---	---	Moderate	Moderate	Low
29:							
Cinderhurst	Lithic bedrock	4-10	---	Indurated	Low	High	Low
30:							
Cinderhurst, extremely shallow	Lithic bedrock	1-4	---	Indurated	Low	High	Low
31:							
Lavacreek	Lithic bedrock	40-60	---	Indurated	Moderate	High	Low
Dollarhide	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
32:							
Lavacreek	Lithic bedrock	40-60	---	Indurated	Moderate	High	Low
Dollarhide	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
33:							
Lavacreek, cold	Lithic bedrock	40-60	---	Indurated	Moderate	High	Low
Dollarhide, cold	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
34:							
Lavacreek	Lithic bedrock	40-60	---	Indurated	Moderate	High	Low
Dollarhide	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
Grassycone	None	---	---	---	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
35:							
Lavacreek	Lithic bedrock	40-60	---	Indurated	Moderate	High	Low
Vitale	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
36:							
McBiggam	None	---	---	---	High	Low	Low
37:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Beartrap	Lithic bedrock	40-60	---	Indurated	Moderate	Low	Low
38:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Beartrap	Lithic bedrock	40-60	---	Indurated	Moderate	Low	Low
39:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Beartrap	Lithic bedrock	40-60	---	Indurated	Moderate	Low	Low
40:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Justesen	None	---	---	---	Moderate	Moderate	Low
41:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Molyneux	None	---	---	---	Moderate	Moderate	Low
42:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Molyneux	None	---	---	---	Moderate	Moderate	Low
43:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Pedleford	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
44:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
44:							
Pedleford	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
45:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
46:							
McCarey	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Splittop	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
47:							
McPan	Duripan	20-39	1-2	Indurated	Moderate	Low	Low
	Lithic bedrock	21-40		Indurated			
Chijer	None	---	---	---	Moderate	High	Moderate
48:							
Molyneux	None	---	---	---	Moderate	Moderate	Low
49:							
Nargon	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
Atom	None	---	---	---	Moderate	High	High
Techicknot	None	---	---	---	Moderate	Moderate	Low
50:							
Nargon	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
Deuce	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
51:							
Neeley	None	---	---	---	High	High	Low
Hodad	Lithic bedrock	20-40	---	Indurated	High	High	Low
52:							
Pagari	Lithic bedrock	40-60	---	Indurated	Moderate	Moderate	Low
Rehfield	Strongly contrasting textural stratification	40-60	---	Noncemented	Moderate	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
53:							
Paulville	None	---	---	---	Moderate	Moderate	Moderate
McPan	Duripan	20-39	1-2	Indurated	Moderate	Low	Low
	Lithic bedrock	21-40		Indurated			
Starbuck	Lithic bedrock	12-20	---	Indurated	Moderate	Moderate	Low
55:							
Portino	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
56:							
Portino	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
57:							
Portino, stony surface	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
58:							
Portino, stony surface	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
59:							
Portino, stony surface	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
Trevino, stony surface	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
60:							
Portneuf, bedrock substratum	Lithic bedrock	40-60	---	Indurated	Moderate	High	Moderate
61:							
Portneuf, bedrock substratum	Lithic bedrock	40-60	---	Indurated	Moderate	High	Moderate
62:							
Portneuf, bedrock substratum	Lithic bedrock	40-60	---	Indurated	Moderate	High	Moderate
63:							
Portneuf	None	---	---	---	Moderate	High	Moderate
Quincy	None	---	---	---	Low	Low	Low
64:							
Povey	Lithic bedrock	40-60	---	Indurated	Moderate	Moderate	Low
Dollarhide	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
65:							
Quincy	None	---	---	---	Low	Low	Low
Walco	Lithic bedrock	20-40	---	Indurated	Low	Low	Low
66:							
Rehfield	Strongly contrasting textural stratification	40-60	---	Noncemented	Moderate	Moderate	Low
67:							
Tenno, very stony surface	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
68:							
Tenno, very stony surface	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
69:							
Trevino, stony surface	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
Portino, stony surface	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
70:							
Roundknoll	None	---	---	---	Moderate	High	Low
71:							
Soen	None	---	---	---	Moderate	Moderate	Low
72:							
Splittop	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
Atomic	Lithic bedrock	40-60	---	Indurated	Moderate	Low	Low
73:							
Starbuck	Lithic bedrock	12-20	---	Indurated	Moderate	Moderate	Low
74:							
Starbuck	Lithic bedrock	12-20	---	Indurated	Moderate	Moderate	Low
McPan	Duripan Lithic bedrock	20-39 21-40	1-2	Indurated Indurated	Moderate	Low	Low

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
75:							
Sunsetcone	Strongly contrasting textural stratification	14-40	---	Noncemented	High	High	Low
76:							
Sunsetcone	Strongly contrasting textural stratification	14-40	---	Noncemented	High	High	Low
Grassycone	None	---	---	---	High	High	Low
77:							
Taunton	Duripan	22-38	8-30	Indurated	Moderate	Low	Low
	Lithic bedrock	42-60		Indurated			
Paulville	None	---	---	---	Moderate	Moderate	Moderate
78:							
Techick	Strongly contrasting textural stratification	40-50	---	Noncemented	Moderate	Moderate	Low
Soelberg	Strongly contrasting textural stratification	30-40	---	Noncemented	Moderate	Moderate	Low
Lesbut	Strongly contrasting textural stratification	10-20	---	Noncemented	Low	Low	Low
79:							
Techicknot	None	---	---	---	Moderate	Moderate	Low
Atom	None	---	---	---	Moderate	High	High
Nargon	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
80:							
Treemold	Lithic bedrock	4-10	---	Indurated	Low	High	Moderate

Table 29.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	*In*				
80:							
Silentcone	Lithic bedrock	20-30	---	Indurated	Moderate	High	Low
81:							
Trevino, stony surface	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low
Portino, stony surface	Lithic bedrock	20-40	---	Indurated	Moderate	High	Low
82:							
Vining	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
Kecko	None	---	---	---	Moderate	Low	Low
83:							
Vining	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Low
Wapi	Lithic bedrock	10-20	---	Indurated	Low	Low	Low
84:							
Vitale	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	Low
Blackspar	Lithic bedrock	10-20	---	Indurated	Moderate	Moderate	Low

Table 30.--Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Atom	Coarse-silty, mixed, superactive, frigid Sodic Xeric Haplocalcids
Atomic	Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids
Bancroft	Fine-silty, mixed, superactive, frigid Calcic Argixerolls
Beartrap	Coarse-loamy, mixed, superactive, frigid Aridic Calcixerolls
Bigcinder	Ashy-skeletal over fragmental or cindery, aniso, glassy Humic Xeric Vitricryands
Blackspar	Loamy-skeletal, mixed, superactive, frigid Lithic Mollic Haploxeralfs
Bringmee	Fine-loamy, mixed, superactive, frigid Pachic Ultic Argixerolls
Carey Lake	Fine-loamy, mixed, superactive, frigid Pachic Argixerolls
Chijer	Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids
Cinderhurst	Medial-skeletal, amorphic, frigid Lithic Vitrixerands
Cox	Loamy-skeletal, mixed, superactive, mesic Lithic Ultic Haploxerolls
Craters	Medial, amorphic, frigid Humic Vitrixerands
Deerhorn	Fine-loamy, mixed, superactive, mesic Argiduridic Durixerolls
Deuce	Loamy, mixed, superactive, frigid Lithic Xeric Haplocalcids
Dollarhide	Loamy-skeletal, mixed, superactive Lithic Haplocryolls
Drage	Loamy-skeletal, mixed, superactive, frigid Calcic Argixerolls
Echocrater	Ashy-skeletal over fragmental or cindery, glassy, frigid Typic Vitrixerands
Farmell	Fine, smectitic, mesic Xeric Haplargids
Goodalfs	Fine-loamy, mixed, superactive, frigid Vitrandic Haploxerolls
Goodington	Fine, smectitic, frigid Typic Palexerolls
Grassycone	Medial, amorphic Humic Xeric Vitricryands
Hal	Medial, amorphic Humic Xeric Vitricryands
Hodad	Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls
Howcan	Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls
Huddle	Medial, amorphic, frigid Typic Vitrixerands
Hutchley	Loamy-skeletal, mixed, superactive, frigid Lithic Argixerolls
Hutton	Fine, smectitic, frigid Cumulic Vertic Endoaquolls
Infernocone	Ashy-skeletal over fragmental or cindery, glassy, frigid Humic Vitrixerands
Justesen	Fine-loamy, mixed, superactive, frigid Calcic Argixerolls
Kecko	Coarse-loamy, mixed, superactive, mesic Xeric Haplocalcids
Lavacreek	Medial-skeletal, amorphic Humic Xeric Vitricryands
Lesbut	Sandy-skeletal, mixed, frigid Calcidic Haploxerolls
Manard	Fine, smectitic, frigid Typic Durixerolls
McBiggam	Fine-silty, mixed, superactive, frigid Typic Palexerolls
McCarey	Fine-loamy, mixed, superactive, frigid Calcic Argixerolls
McPan	Fine-silty, mixed, superactive, mesic Xeric Argidurids
Molyneux	Fine-loamy, mixed, superactive, frigid Ultic Argixerolls
Moonville	Medial, amorphic, frigid Typic Vitrixerands
Nargon	Coarse-loamy, mixed, superactive, frigid Xeric Haplocalcids
Neeley	Coarse-silty, mixed, superactive, mesic Calcidic Haploxerolls
Northcrater	Ashy-skeletal, glassy, nonacid, frigid Vitrandic Xerorthents
Pagari	Loamy-skeletal, mixed, superactive, mesic Calciargidic Argixerolls
Paulville	Fine-loamy, mixed, superactive, mesic Xeric Calciargids
Pedleford	Loamy-skeletal, mixed, superactive, frigid Calcic Haploxerolls
Portino	Coarse-silty, mixed, superactive, mesic Xeric Haplocalcids
Portneuf	Coarse-silty, mixed, superactive, mesic Durinodic Xeric Haplocalcids
Povey	Loamy-skeletal, mixed, superactive Pachic Haplocryolls
Power	Fine-silty, mixed, superactive, mesic Xeric Calciargids
Quincy	Mixed, mesic Xeric Torripsamments
Rehfield	Fine-loamy, mixed, superactive, mesic Ultic Argixerolls
Rekima	Loamy-skeletal, mixed, superactive, mesic, shallow Xeric Haplodurids
Roundknoll	Ashy-skeletal, glassy, frigid Typic Vitrixerands
Silentcone	Ashy-skeletal, glassy, frigid Humic Vitrixerands
Soelberg	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Calciargidic Argixerolls
Soen	Fine, smectitic, frigid Calcic Argixerolls
Splittop	Coarse-silty, mixed, superactive, frigid Xeric Haplocalcids
Starbuck	Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids
Sunsetcone	Medial over pumiceous or cindery, amorphic over glassy Humic Xeric Vitricryands
Taunton	Coarse-loamy, mixed, superactive, mesic Xeric Haplodurids

Table 30.--Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Techick	Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls
Techicknot	Fine-loamy, mixed, superactive, frigid Calciargidic Argixerolls
Tenno	Loamy, mixed, superactive, frigid Lithic Xeric Haplocambids
Treemold	Ashy-skeletal, glassy, frigid Lithic Vitrixerands
Trevino	Loamy, mixed, superactive, mesic Lithic Xeric Haplocambids
Vining	Coarse-loamy, mixed, superactive, mesic Xeric Haplocambids
Vitale	Loamy-skeletal, mixed, superactive, frigid Typic Argixerolls
Walco	Mixed, mesic Xeric Torripsamments
Wapi	Mixed, mesic Lithic Xeropsamments
Wildors	Loamy-skeletal, mixed, superactive, mesic Haploduridic Durixerolls
Zeebar	Loamy-skeletal, mixed, superactive Xeric Argicryolls

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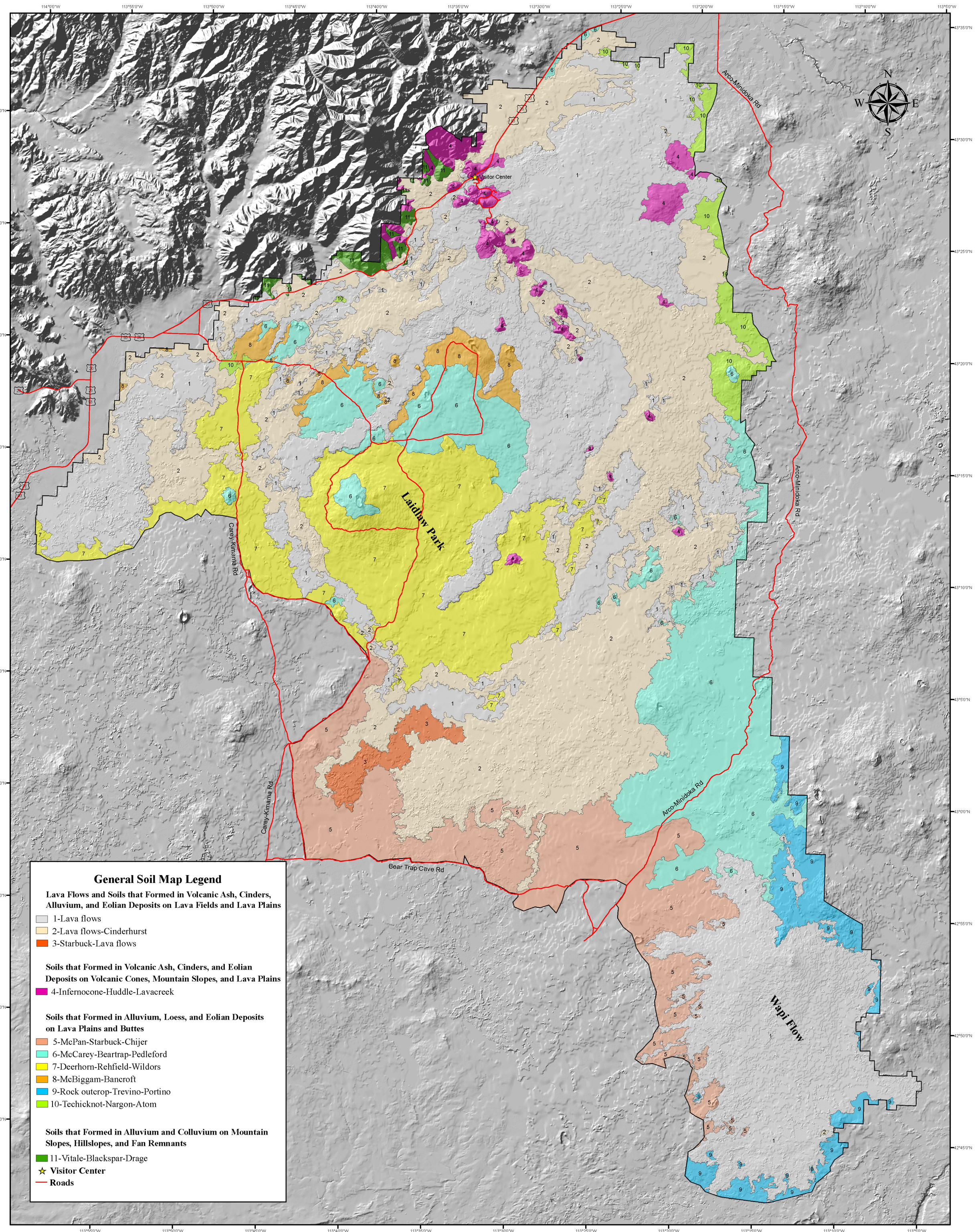
General Soil Map
Craters of the Moon National Monument and Preserve, Idaho



General Soil Map Legend

Lava Flows and Soils that Formed in Volcanic Ash, Cinders, Alluvium, and Eolian Deposits on Lava Fields and Lava Plains

- 1-Lava flows
- 2-Lava flows-Cinderhurst
- 3-Starbuck-Lava flows

Soils that Formed in Volcanic Ash, Cinders, and Eolian Deposits on Volcanic Cones, Mountain Slopes, and Lava Plains

- 4-Infernocone-Huddle-Lavacreek

Soils that Formed in Alluvium, Loess, and Eolian Deposits on Lava Plains and Buttes

- 5-McPan-Starbuck-Chijer
- 6-McCarey-Beartrap-Pedleford
- 7-Deerhorn-Rehfield-Wildors
- 8-McBiggam-Bancroft
- 9-Rock outcrop-Trevino-Portino
- 10-Techicknot-Nargon-Atom

Soils that Formed in Alluvium and Colluvium on Mountain Slopes, Hillslopes, and Fan Remnants

- 11-Vitale-Blackspar-Drage
- **Visitor Center**
- **Roads**

10 5 0 10
Miles

10 0 10
Kilometers

United States Department of Agriculture,
Natural Resources Conservation Service
United States Department of the Interior,
National Park Service and
Bureau of Land Management
University of Idaho, College of Agriculture
Idaho Soil Conservation Commission

Generalized soil survey data from the USDA-NRCS Soil Survey of Craters of the Moon National Monument and Preserve, Idaho; 1:24000
Background elevation from USGS seamless 1/3 arc sec DEM converted to 10m data; 1:24000
Road layer from the 2002 TIGER dataset; 1:100000
Map date: June 2010

114°00'00"

113°15'00"

43°30'00"

42°45'00"

N

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

CHAMPAGNE CREEK
NICHOLS RESERVOIR
ARCO SOUTH
FISH CREEK RESERVOIR
BLIZZARD MOUNTAIN SOUTH
INFERNO CONE
THE WATCHMAN
FINGERS BUTTE
CAREY
PADDLEFORD FLAT
LITTLE PARK
NORTH LAIDLAW BUTTE
FISSURE BUTTE
PRATT BUTTE
PAGARI WELL
WAGON BUTTE
LAIDLAW BUTTE
BEAR DEN BUTTE
BEAR PARK WEST
BEAR PARK EAST
LAIDLAW LAKE
BOTTLENECK LAKE
BEAR PARK SW
MULE BUTTE
MOSBY BUTTE
COMMUNITY LAKE
LARKSPUR PARK
BRIGHAM POINT
BEAR TRAP CAVE
PILLAR BUTTE
SCHODDE WELL
RATTLESNAKE BUTTE
PILLAR BUTTE SE
LAKE WALCOTT EAST
GIFFORD SPRING

BUTTE COUNTY
BLAINE COUNTY
LINCOLN COUNTY
MINIDOKA COUNTY
POWER COUNTY

T 3 N
T 2 N
T 1 N
T 1 S
T 2 S
T 3 S
T 4 S
T 5 S
T 6 S
T 7 S
T 8 S

R 21 E
R 22 E
R 23 E
R 24 E
R 25 E
R 26 E
R 27 E
R 28 E
R 29 E

20

INDEX TO MAP SHEETS

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE
IDAHO

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:170000

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
UNIVERSITY OF IDAHO, COLLEGE OF AGRICULTURE;
IDAHO SOIL CONSERVATION COMMISSION

SOIL LEGEND

SYMBOL	NAME
1	Bancroft silt loam, 1 to 4 percent slopes
2	Bancroft silt loam, 4 to 8 percent slopes
3	Bigcinder ashy sandy loam, 20 to 50 percent slopes
3A	Bigcinder ashy sandy loam, 2 to 20 percent slopes
4	Blackspar-Rock outcrop complex, 45 to 75 percent slopes
5	Bringmee-Hutton complex, 1 to 4 percent slopes
6	Carey Lake loam, 0 to 2 percent slopes
7	Cinder land-Northcrater association, 2 to 50 percent slopes
8	Cox-Rehfield-Rock outcrop complex, 2 to 15 percent slopes
9	Deerhorn-Rehfield-Rock outcrop complex, 2 to 15 percent slopes
10	Deerhorn-Wildors complex, 2 to 8 percent slopes
11	Deerhorn-Wildors-Rekima complex, 2 to 15 percent slopes
12	Deuce-Nargon-Lava flows complex, 2 to 12 percent slopes
13	Drage gravelly loam, cool, 2 to 15 percent slopes
14	Drage very gravelly loam, cool, 0 to 3 percent slopes
15	Echocrater gravelly ashy loamy sand, 20 to 40 percent slopes
16	Farmell-Power-Playas complex, 0 to 2 percent slopes
17	Goodalfs-Craters association, 0 to 5 percent slopes
18	Goodington-Manard complex, 2 to 8 percent slopes
19	Hal-Moonville association, 15 to 60 percent slopes
20	Howcan-Zeebar-Hutchley association, 15 to 60 percent slopes
21	Huddle-Moonville complex, 2 to 12 percent slopes
22	Hutton clay loam, 0 to 2 percent slopes
23	Infernocone gravelly ashy sandy loam, 2 to 20 percent slopes
24	Infernocone gravelly ashy sandy loam, 20 to 40 percent slopes
25	Justesen loam, 2 to 4 percent slopes
26	Justesen loam, 4 to 8 percent slopes
27	Justesen-Drage complex, 1 to 20 percent slopes
28	Lava flows
29	Lava flows-Cinderhurst complex, 2 to 15 percent slopes
30	Lava flows-Cinderhurst, extremely shallow complex, 2 to 15 percent slopes
31	Lavacreek-Dollarhide complex, 15 to 60 percent slopes
32	Lavacreek-Dollarhide complex, 30 to 60 percent slopes
33	Lavacreek-Dollarhide complex, cold, 15 to 60 percent slopes
34	Lavacreek-Dollarhide-Grassycone complex, 30 to 60 percent slopes
35	Lavacreek-Vitale association, 30 to 60 percent slopes
36	McBiggam silt loam, 2 to 8 percent slopes
37	McCarey-Beartrap complex, 1 to 6 percent slopes
38	McCarey-Beartrap complex, 6 to 20 percent slopes
39	McCarey-Beartrap-Rock outcrop complex, 2 to 15 percent slopes
40	McCarey-Justesen complex, 2 to 8 percent slopes
41	McCarey-Molyneux complex, 2 to 8 percent slopes
42	McCarey-Molyneux-Rock outcrop complex, 2 to 15 percent slopes
43	McCarey-Pedleford complex, 2 to 30 percent slopes
44	McCarey-Pedleford complex, 8 to 20 percent slopes
45	McCarey-Rock outcrop complex, 0 to 12 percent slopes
46	McCarey-Splittop-Lava flows complex, 4 to 8 percent slopes
47	McPan-Chijer complex, 1 to 6 percent slopes
48	Molyneux loam, 2 to 4 percent slopes
49	Nargon-Atom-Techicknot complex, 0 to 20 percent slopes
50	Nargon-Deuce-Lava flows complex, 2 to 20 percent slopes
51	Neeley-Hodad complex, 2 to 4 percent slopes
52	Pagari-Rehfield complex, 2 to 15 percent slopes
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68	Rock outcrop-Tenno, very stony complex, 20 to 60 percent slopes
69	Rock outcrop-Trevino, stony-Portino, stony complex, 0 to 20 percent slopes
70	Roundknoll gravelly ashy loamy sand, 2 to 20 percent slopes
71	Soen clay loam, 0 to 4 percent slopes
72	Splittop-Atomic complex, 2 to 8 percent slopes
73	Starbuck-Lava flows complex, 2 to 20 percent slopes
74	Starbuck-McPan-Rock outcrop complex, 2 to 20 percent slopes
75	Sunsetcone gravelly medial loam, 30 to 60 percent slopes
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CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline and neatline
- Previously published survey

OTHER BOUNDARY

- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- Trail

ROAD EMBLEMS AND DESIGNATIONS

- Interstate (173; 79 345)
- Federal (287; 410 224)
- State (52; 52 347)
- County, farm or ranch (1283)

RAILROAD

POWER TRANSMISSION LINE

PIPE LINE

FENCE

LEVEES

- Without road
- With road
- With railroad
- Single side slope

DAMS

- Medium or small

LANDFORM FEATURES

- Prominent hill or peak

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house
- Church
- School
- Other religion (Mt Carmel)
- Located object (Ranger Station)
- Tank (Petroleum)
- Lookout tower
- Oil and/or natural gas wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial stream, double line
- Perennial stream, single line — Label only
- Intermittent stream — Label only
- Drainage end — Label only

DRAINAGE AND IRRIGATION

- Double-line canal (CANAL)
- Perennial drainage and/or irrigation ditch — Label only
- Intermittent drainage and/or irrigation ditch — Label only

SMALL LAKES, PONDS, AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line (FLOOD POOL LINE)

MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS (1 14)

LANDFORM FEATURES

- Bedrock escarpment
- Other than bedrock escarpment
- Short steep slope
- Gully
- Depression, closed
- Sinkhole
- Borrow pit
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava spot
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
CHAMPAGNE CREEK QUADRANGLE
SHEET NUMBER 1 OF 35

113°37′30″ | 113°35′00″ | 113°32′30″ | 113°30′00″

R. 24 E. | R. 25 E.

43°37′30″ | 43°35′00″ | 43°32′30″ | 43°30′00″

4833 | 4832 | 4831 | 4830000mN | 4829 | 4828 | 4827 | 4826 | 4825 | 4823 | 4822 | 4821 | 4820000mN

289000mE | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298

T. 2 N. | T. 3 N.

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 2, Nichols Reservoir

Joins sheet 5, Blizzard Mountain South

Joins sheet 6, Inferno Cone

Joins sheet 7, The Watchman

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

INDEX TO ADJOINING 7.5 MAPS

2 NICHOLS RESERVOIR
5 BLIZZARD MOUNTAIN SOUTH
6 INFERNO CONE
7 THE WATCHMAN

CHAMPAGNE CREEK, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
NICHOLS RESERVOIR QUADRANGLE
SHEET NUMBER 2 OF 35

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS 1 0 1

INDEX TO ADJOINING 7.5 MAPS

1 CHAMPAGNE CREEK
3 ARCO SOUTH
6 INFERNO CONE
7 THE WATCHMAN
8 FINGERS BUTTE

NICHOLS RESERVOIR, IDAHO

7.5 MINUTE SERIES
SHEET NUMBER 2 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
ARCO SOUTH QUADRANGLE
SHEET NUMBER 3 OF 35

113°22′30″ | 113°20′00″ | 113°17′30″ | 113°15′00″

309 000m E | 310 | 311 | 312 | 313 | 314 | R. 26 E. | R. 27 E. | 316 | 317 | 318

43°37′30″ | 4832 | 4831 | 4830 000m N | 4829 | 43°35′00″ | 4828 | 4827 | 4826 | 4825 | 4824 | 43°32′30″ | 4822 | 4821 | 4820 000m N | 43°30′00″

T. 2 N. | T. 3 N.

4829 000m N | 4827 | 4826 | 4825 | 4824 | 43°32′30″ | 4822 | 4821 | 4820 | 4819 000m N | 43°30′00″

Joins sheet 2, Nichols Reservoir

Joins sheet 7, The Watchman

Joins sheet 8, Fingers Butte

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

2		2 NICHOLS RESERVOIR
		7 THE WATCHMAN
7	8	8 FINGERS BUTTE

ARCO SOUTH, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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DEPARTMENT OF AGRICULTURE
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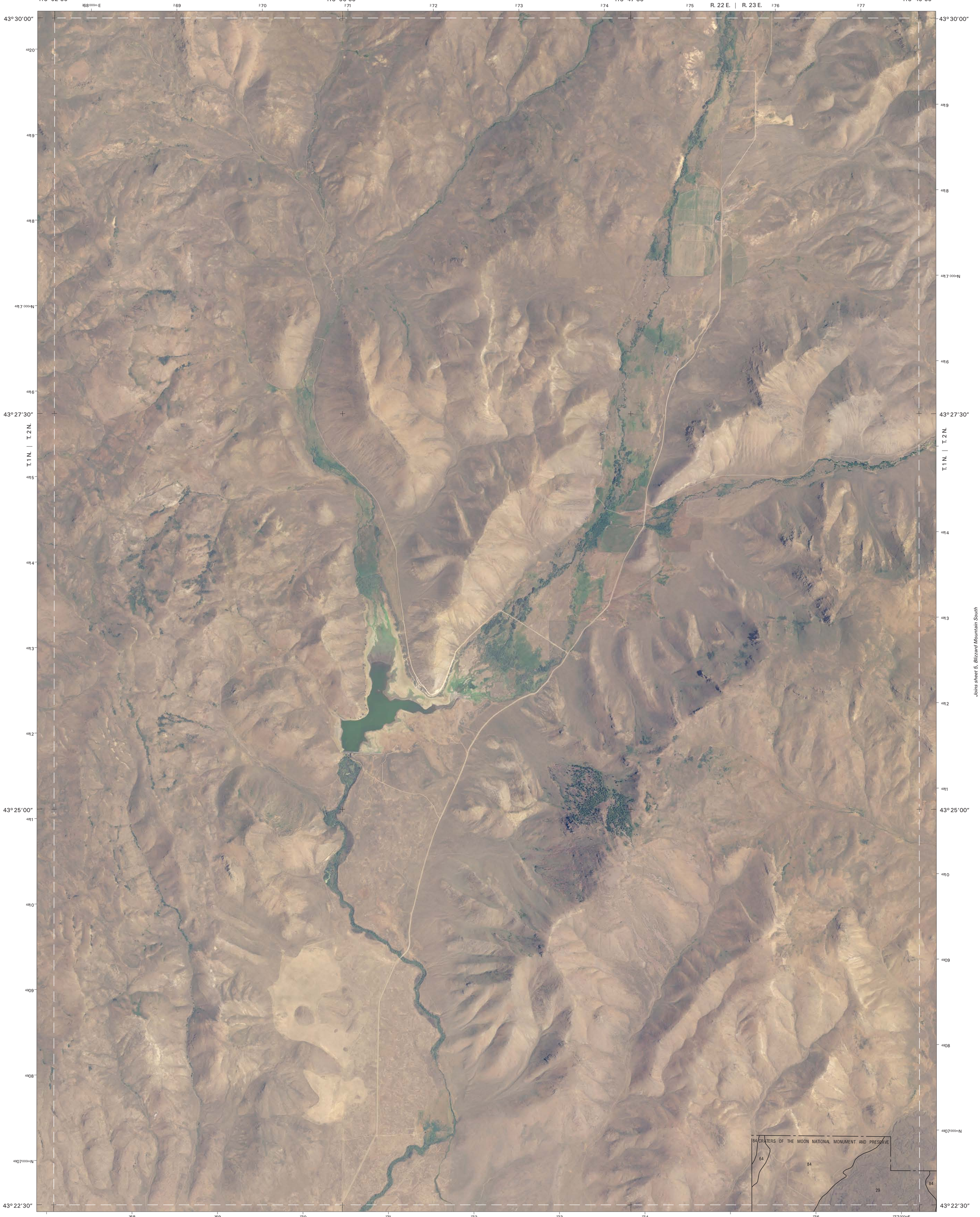
CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
FISH CREEK RESERVOIR QUADRANGLE
SHEET NUMBER 4 OF 35



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

		5
9	10	11

5 BLIZZARD MOUNTAIN SOUTH
9 CAREY
10 PADDELFORD FLAT
11 LITTLE PARK

INDEX TO ADJOINING 7.5 MAPS

FISH CREEK RESERVOIR, IDAHO

7.5 MINUTE SERIES
SHEET NUMBER 4 OF 35

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UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BLIZZARD MOUNTAIN SOUTH QUADRANGLE
SHEET NUMBER 5 OF 35

Joins sheet 1, Champagne Creek

113° 45′ 00″ | 113° 42′ 30″ | 113° 40′ 00″ | R. 23 E. | R. 24 E. | 113° 37′ 30″

278 000m E | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287

43° 30′ 00″ | 4819 | 4818 | 4817 000mN | 4816 | 43° 27′ 30″ | T. 1 N. | T. 2 N. | 4814 | 4813 | 4812 | 4811 | 43° 25′ 00″ | 4810 | 4809 | 4808 | 4807 000mN | 43° 22′ 30″

Joins sheet 4, Fish Creek Reservoir

Joins sheet 6, Inferno Cone

Joins sheet 10, Paddelford Flat

Joins sheet 11, Little Park

Joins sheet 12, North Laidlaw Butte

Lava Lake

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

		1
4		6
10	11	12

1 CHAMPAGNE CREEK
4 FISH CREEK RESERVOIR
6 INFERNO CONE
10 PADDELFORD FLAT
11 LITTLE PARK
12 NORTH LAIDLAW BUTTE

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BLIZZARD MOUNTAIN SOUTH, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 35

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UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
INFERNO CONE QUADRANGLE
SHEET NUMBER 6 OF 35

Joins sheet 2, Nichols Reservoir

Joins sheet 1, Champagne Creek

113°37′30″ — 113°35′00″ — 113°32′30″ — 113°30′00″

R. 24 E. | R. 25 E.

43°30′00″ — 43°27′30″ — 43°25′00″ — 43°22′30″

T. 1 N. | T. 2 N.

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

PIONEER MOUNTAINS

Little Cottonwood Springs

Group Campground

Sunset Cone

North Crater Aa Flow

Headquarters and Information Center

Campground

NORTH CRATER FLOW

Serrate Flow

Grassy Cone

Paisley Cone

Devils Orchard

North Crater

Silent Cone

Big Craters

Inferno Cone

Snow Cone

Spatter Cone

Big Sink Waterhole

BLACK FLOW

BIG CRATERS FLOW

Crystal Fissure

Broken Top

Buffalo Caves Flow

Half Cone

Blue Dragon Flow

Big Cinder Butte

Trench Mortar Flat

Crescent Butte

Tree Molds

Coyote Butte

Yellowjacket Waterhole

Derelict Flow

Echo Crater

Sawtooth Flow

93 20 26

4819 4818 4817 4816 000mN 4815 4814 4813 4812 4811 4810 4809 4808 4807 4806 000mN

288 000mE 289 290 291 292 293 294 295 296 297

Joins sheet 5, Blizzard Mountain South

Joins sheet 7, The Watchman

Joins sheet 11, Little Park

Joins sheet 12, North Laidlaw Butte

Joins sheet 13, Fissure Butte

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

	1	2
5		7
11	12	13

1 CHAMPAGNE CREEK
2 NICHOLS RESERVOIR
5 BLIZZARD MOUNTAIN SOUTH
7 THE WATCHMAN
11 LITTLE PARK
12 NORTH LAIDLAW BUTTE
13 FISSURE BUTTE

INDEX TO ADJOINING 7.5 MAPS

INFERNO CONE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
THE WATCHMAN QUADRANGLE
SHEET NUMBER 7 OF 35

Joins sheet 1, Champagne Creek
Joins sheet 2, Nichols Reservoir
Joins sheet 3, Arco South
Joins sheet 6, Inferno Cone
Joins sheet 8, Fingers Butte
Joins sheet 12, North Laidlaw Butte
Joins sheet 13, Fissure Butte
Joins sheet 14, Pratt Butte

113°30′00″ 113°27′30″ 113°25′00″ 113°22′30″
R. 25 E. | R. 26 E.
T. 1 N. | T. 2 N.
43°30′00″ 43°27′30″ 43°25′00″ 43°22′30″

298 000m E 299 300 301 302 303 304 305 306 307 308 000m E
4819 4818 4817 4816 000m N 4815 4814 4813 4812 4811 4810 4809 4808 4807 4806 000m N

Serrate Flow
Huddles Hole
Black Flow
LITTLE PRAIRIE
Little Prairie
Great Rift
Aa Flow
The Sentinel

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

1	2	3	1 CHAMPAGNE CREEK 2 NICHOLS RESERVOIR 3 ARCO SOUTH
6		8	6 INFERNO CONE 8 FINGERS BUTTE
12	13	14	12 NORTH LAIDLAW BUTTE 13 FISSURE BUTTE 14 PRATT BUTTE

INDEX TO ADJOINING 7.5 MAPS

THE WATCHMAN, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 35

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UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
FINGERS BUTTE QUADRANGLE
SHEET NUMBER 8 OF 35

Joins sheet 2, Nichols Reservoir
Joins sheet 3, Arco South
Joins sheet 7, The Watchman
Joins sheet 13, Fissure Butte
Joins sheet 14, Pratt Butte

113°22′30″ 113°20′00″ 113°17′30″ 113°15′00″
43°30′00″ 43°27′30″ 43°25′00″ 43°22′30″
R. 26 E. | R. 27 E.
T. 1 N. | T. 2 N.

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Saddle Butte
Huddles Hole

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

2	3		2 NICHOLS RESERVOIR 3 ARCO SOUTH
7			7 THE WATCHMAN
13	14		13 FISSURE BUTTE 14 PRATT BUTTE

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FINGERS BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 35

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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
CAREY QUADRANGLE
SHEET NUMBER 9 OF 36

Joins sheet 4, Fish Creek Reservoir

114°00′00″ | 113°57′30″ | 113°55′00″ | 113°52′30″

R. 21 E. | R. 22 E.

43°22′30″ | 43°20′00″ | 43°17′30″ | 43°15′00″

T. 1 S. | T. 1 N. | T. 2 S. | T. 1 S.

Joins sheet 10, Paddelford Flat

Joins sheet 15, Pagari Well

Joins sheet 16, Wagon Butte

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Wood River

Little Wood River

SCALE 1:24000

MILES 1 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS 1 0 1

NORTH

QUADRANGLE LOCATION

INDEX TO ADJOINING 7.5 MAPS

4 FISH CREEK RESERVOIR
10 PADDELFORD FLAT
15 PAGARI WELL
16 WAGON BUTTE

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

CAREY, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 36

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UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
PADDELFORD FLAT QUADRANGLE
SHEET NUMBER 10 OF 35

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

	4	5
9		11
15	16	17

4 FISH CREEK RESERVOIR
5 BLIZZARD MOUNTAIN SOUTH
9 CAREY
11 LITTLE PARK
15 PAGARI WELL
16 WAGON BUTTE
17 LAIDLAW BUTTE

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PADDELFORD FLAT, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 35

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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
LITTLE PARK QUADRANGLE
SHEET NUMBER 11 OF 35

Joins sheet 4, Fish Creek Reservoir
Joins sheet 5, Blizzard Mountain South
Joins sheet 6, Inferno Cone
Joins sheet 10, Paddelford Flat
Joins sheet 12, North Laidlaw Butte
Joins sheet 16, Wagon Butte
Joins sheet 17, Laidlaw Butte
Joins sheet 18, Bear Den Butte

113°45′00″ | 113°42′30″ | 113°40′00″ | 113°37′30″
R. 23 E. | R. 24 E.
T. 1 S. | T. 1 N.
T. 2 S. | T. 1 S.
43°22′30″ | 43°20′00″ | 43°17′30″ | 43°15′00″
277000m E | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287
4806 | 4805 | 4804 | 4803000m N | 4803 | 4802 | 4801 | 4800 | 4799 | 4798 | 4797 | 4796 | 4795 | 4794 | 4793000m N | 4793 | 4792000m N

LITTLE PARK

Carey Kipuka

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

4	5	6
10		12
16	17	18

4 FISH CREEK RESERVOIR
5 BLIZZARD MOUNTAIN SOUTH
6 INFERNO CONE
10 PADDELFORD FLAT
12 NORTH LAIDLAW BUTTE
16 WAGON BUTTE
17 LAIDLAW BUTTE
18 BEAR DEN BUTTE

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LITTLE PARK, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 35

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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
NORTH LAIDLAW BUTTE QUADRANGLE
SHEET NUMBER 12 OF 35

Joins sheet 6, Inferno Cone

113°37′30″ | 113°35′00″ | 113°32′30″ | 113°30′00″
R. 24 E. | R. 25 E.
T. 1 S. | T. 1 N.
T. 2 S. | T. 1 S.
43°22′30″ | 43°20′00″ | 43°17′30″ | 43°15′00″
287000mE | 288000mE | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297000mE
4805 | 4804 | 4803 | 4802000mN | 4801 | 4800 | 4799 | 4798 | 4797 | 4796 | 4795 | 4794 | 4793 | 4792000mN

North Laidlaw Butte
SAWTOOTH FLOW
Snowdrift Crater
Bowl Crater
LITTLE LAIDLAW PARK
Big Blowout Butte
Blowout Reservoir
Spencer Lake
Two Bottom Lake
Turnbull Butte
Erwin Reservoir

Joins sheet 11, Little Park
Joins sheet 13, Fissure Butte
Joins sheet 17, Laidlaw Butte
Joins sheet 18, Bear Den Butte
Joins sheet 19, Bear Park West

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

5	6	7
11		13
17	18	19

5 BLIZZARD MOUNTAIN SOUTH
6 INFERNO CONE
7 THE WATCHMAN
11 LITTLE PARK
13 FISSURE BUTTE
17 LAIDLAW BUTTE
18 BEAR DEN BUTTE
19 BEAR PARK WEST

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NORTH LAIDLAW BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
FISSURE BUTTE QUADRANGLE
SHEET NUMBER 13 OF 35

Joins sheet 6, Inferno Cone
Joins sheet 7, The Watchman
Joins sheet 8, Fingers Butte
Joins sheet 12, North Laidlaw Butte
Joins sheet 14, Pratt Butte
Joins sheet 18, Bear Den Butte
Joins sheet 19, Bear Park West
Joins sheet 20, Bear Park East

113°30′00″ | 113°27′30″ | R. 25 E. | R. 26 E. | 113°25′00″ | 113°22′30″
43°22′30″ | 43°20′00″ | 43°17′30″ | 43°15′00″
T. 1 S. | T. 1 N. | T. 2 S. | T. 1 S.

Little Prairie
Split Butte
Fissure Butte
Sheep Trail Butte
Vermillion Chasm Flow
Vermillion Chasm
Bridge of the Moon
GREAT RIFT
Two Point Butte
Purple Butte

298000m E | 299 | 300 | 301 | 302 | 303 | 305 | 306 | 307000m E
4805 | 4804 | 4803 | 4802000m N | 4801 | 4800 | 4799 | 4798 | 4797 | 4795 | 4794 | 4793 | 4792000m N

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

6	7	8
12		14
18	19	20

6 INFERNO CONE
7 THE WATCHMAN
8 FINGERS BUTTE
12 NORTH LAIDLAW BUTTE
14 PRATT BUTTE
18 BEAR DEN BUTTE
19 BEAR PARK WEST
20 BEAR PARK EAST

INDEX TO ADJOINING 7.5 MAPS

FISSURE BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
PRATT BUTTE QUADRANGLE (OVERSIZED)
SHEET NUMBER 14 OF 35

Joins sheet 7, The Watchman

Joins sheet 8, Fingers Butte

113°22′30″ — 113°20′00″ — 113°17′30″ — 113°15′00″

R. 26 E. | R. 27 E.

708 000m E — 709 — 710 — 711 — 712 — 713 — 714 — 715 — 716 — 717 000m E

43°22′30″ — 43°20′00″ — 43°17′30″ — 43°15′00″

T. 1 S. | T. 1 N. — T. 2 S. | T. 1 S.

4805 — 4804 — 4803 — 4802 000m N — 4801 — 4800 — 4799 — 4798 — 4797 — 4796 — 4795 — 4794 — 4793 — 4792 000m N — 4792

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Pratt Butte

GREAT RIFT

Joins sheet 13, Fissure Butte

Joins sheet 19, Bear Park West

Joins sheet 20, Bear Park East

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

7	8		7 THE WATCHMAN 8 FINGERS BUTTE
13			13 FISSURE BUTTE
19	20		19 BEAR PARK WEST 20 BEAR PARK EAST

INDEX TO ADJOINING 7.5 MAPS

PRATT BUTTE, (OVERSIZED) IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
PAGARI WELL QUADRANGLE
SHEET NUMBER 15 OF 36

Joins sheet 9, Carey
Joins sheet 10, Paddelford Flat
Joins sheet 16, Wagon Butte

114°00′00″ | 113°57′30″ | 113°55′00″ | 113°52′30″
43°15′00″ | 43°12′30″ | 43°10′00″ | 43°07′30″
R. 21 E. | R. 22 E.
T. 3 S. | T. 2 S.
744000mE 745 746 747 748 749 750 751 752 753 754000mE
4793 4792 4791 4790000mN 4789 4788 4787 4786 4785 4784 4783 4782 4781 4780000mN

MOON NATIONAL MOUMENT AND PRESERVE
CRATERS OF THE
CRATERS OF THE MOON NATIONAL MOUMENT AND PRESERVE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 11. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

	9	10
		16

9 CAREY
10 PADDELFORD FLAT
16 WAGON BUTTE

PAGARI WELL, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 36

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
WAGON BUTTE QUADRANGLE
SHEET NUMBER 16 OF 35

113°52′30″ 113°50′00″ 113°47′30″ 113°45′00″
43°15′00″ 43°12′30″ 43°10′00″ 43°07′30″
R. 22 E. | R. 23 E.
T. 3 S. | T. 2 S.
267000m E 268 269 270 271 272 273 274 275 276000mE
4792 4791 4790 4789000mN 4788 4786 4785 4784 4783 4782 4781 4780 4779000mN

Wagon Butte
Wildhorse Lake
Cliff Lake
Rattler Reservoir
Bacon Lake
CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE
CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 15, Pagari Well
Joins sheet 17, Laidlaw Butte
Joins sheet 21, Laidlaw Lake

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

9	10	11	9 CAREY 10 PADDELFORD FLAT 11 LITTLE PARK
15		17	15 PAGARI WELL 17 LAIDLAW BUTTE
		21	21 LAIDLAW LAKE

INDEX TO ADJOINING 7.5 MAPS

WAGON BUTTE, IDAHO

7.5 MINUTE SERIES
SHEET NUMBER 16 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
LAIDLAW BUTTE QUADRANGLE
SHEET NUMBER 17 OF 35

Joins sheet 10, Paddelford Flat
Joins sheet 11, Little Park
Joins sheet 12, North Laidlaw Butte
Joins sheet 16, Wagon Butte
Joins sheet 18, Bear Den Butte
Joins sheet 21, Laidlaw Lake
Joins sheet 22, Bottleneck Lake

113°45′00″ | 113°42′30″ | 113°40′00″ | 113°37′30″
43°15′00″ | 43°12′30″ | 43°10′00″ | 43°07′30″
277000m E | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286
4792 | 4791 | 4790 | 4789000m N | 4789 | 4788 | 4787 | 4786 | 4785 | 4784 | 4783 | 4782 | 4781 | 4780 | 4779000m N | 4779
R. 23 E. | R. 24 E.
T. 3 S. | T. 2 S.

Moran Lake
Twin Lakes
Baldwin Lake
Laidlaw Butte
Baird Reservoir
Brigham Lake Reservoir
Hidden Lake
Crossing Lake
Deep Lake
CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

10	11	12
16		18
	21	22

10 PADDELFORD FLAT
11 LITTLE PARK
12 NORTH LAIDLAW BUTTE
16 WAGON BUTTE
18 BEAR DEN BUTTE
21 LAIDLAW LAKE
22 BOTTLENECK LAKE

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LAIDLAW BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BEAR DEN BUTTE QUADRANGLE
SHEET NUMBER 18 OF 35

Joins sheet 11, Little Park
Joins sheet 12, North Laidlaw Butte
Joins sheet 13, Fissure Butte
Joins sheet 17, Laidlaw Butte
Joins sheet 19, Bear Park West
Joins sheet 21, Laidlaw Lake
Joins sheet 22, Bottleneck Lake
Joins sheet 23, Bear Park SW

113°37′30″ 113°35′00″ 113°32′30″ 113°30′00″
R. 24 E. | R. 25 E.
T. 3 S. | T. 2 S.
43°15′00″ 43°12′30″ 43°10′00″ 43°07′30″
287000m E 288 289 290 291 292 293 295 296 297000m E
4791 4790 4789 4788000mN 4787 4786 4785 4784 4783 4782 4781 4780 4779 4778000mN

Lava Butte
Bear Den Butte

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

11	12	13
17		19
21	22	23

11 LITTLE PARK
12 NORTH LAIDLAW BUTTE
13 FISSURE BUTTE
17 LAIDLAW BUTTE
19 BEAR PARK WEST
21 LAIDLAW LAKE
22 BOTTLENECK LAKE
23 BEAR PARK SW
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BEAR DEN BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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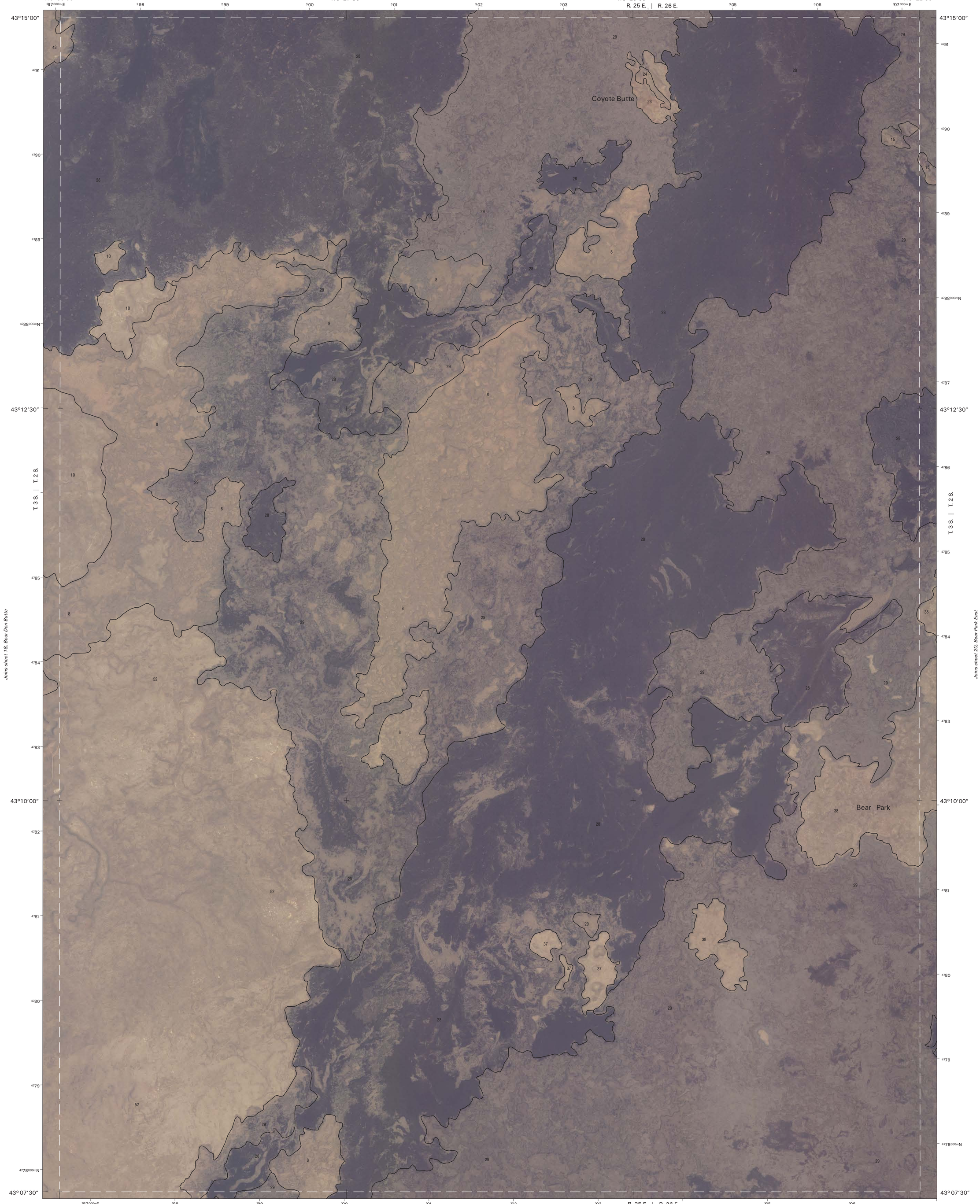
CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BEAR PARK WEST QUADRANGLE
SHEET NUMBER 19 OF 35



Joins sheet 18, Bear Den Butte

Joins sheet 20, Bear Park East

Joins sheet 22, Bottleneck Lake

Joins sheet 24, Mule Butte

Joins sheet 23, Bear Park SW

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

12	13	14
18		20
22	23	24

12 NORTH LAIDLAW BUTTE
13 FISSURE BUTTE
14 PRATT BUTTE
18 BEAR DEN BUTTE
20 BEAR PARK EAST
22 BOTTLENECK LAKE
23 BEAR PARK SW
24 MULE BUTTE

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BEAR PARK WEST, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BEAR PARK EAST QUADRANGLE
SHEET NUMBER 20 OF 35

Joins sheet 13, Fissure Butte

Joins sheet 14, Pratt Butte

113°22′30″ | R. 26 E. | R. 27 E. | 113°20′00″ | 113°17′30″ | 113°15′00″

43°15′00″ | 43°12′30″ | 43°10′00″ | 43°07′30″

T. 3 S. | T. 2 S.

GREAT RIFT

GREAT RIFT

New Butte

Bear Park

Park Butte

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 19, Bear Park West

Joins sheet 23, Bear Park SW

Joins sheet 24, Mule Butte

Joins sheet 25, Mosby Butte

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

13	14		13 FISSURE BUTTE 14 PRATT BUTTE
19			19 BEAR PARK WEST
23	24	25	23 BEAR PARK SW 24 MULE BUTTE 25 MOSBY BUTTE

INDEX TO ADJOINING 7.5 MAPS

BEAR PARK EAST, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 20 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
LAIDLAW LAKE QUADRANGLE
SHEET NUMBER 21 OF 35

Joins sheet 16, Wagon Butte
Joins sheet 17, Laidlaw Butte
Joins sheet 18, Bear Den Butte
Joins sheet 22, Bottleneck Lake
Joins sheet 26, Community Lake
Joins sheet 27, Larkspur Park

113°45′00″ 113°42′30″ 113°40′00″ 113°37′30″
43°07′30″ 43°05′00″ 43°02′30″ 43°00′00″
R. 23 E. | R. 24 E.
T. 3 S. | T. 4 S.
T. 4 S. | T. 5 S.
277000m E 278 279 280 281 282 283 284 285 286000m E
4778 4777 4776 4775000m N 4774 4773 4772 4771 4770 4769 4768 4767 4766 4765000m N

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Laidlaw Lake

Steamboat Lake

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

HELIX

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

			16 WAGON BUTTE
16	17	18	17 LAIDLAW BUTTE
			18 BEAR DEN BUTTE
		22	22 BOTTLENECK LAKE
	26	27	26 COMMUNITY LAKE
			27 LARKSPUR PARK

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LAIDLAW LAKE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BOTTLENECK LAKE QUADRANGLE
SHEET NUMBER 22 OF 35

Joins sheet 17, Laidlaw Butte
Joins sheet 18, Bear Den Butte
Joins sheet 19, Bear Park West
Joins sheet 21, Laidlaw Lake
Joins sheet 23, Bear Park SW
Joins sheet 26, Community Lake
Joins sheet 27, Larkspur Park
Joins sheet 28, Brigham Point

113°37′30″ | 113°35′00″ | 113°32′30″ | 113°30′00″
R. 24 E. | R. 25 E.
43°07′30″ | 43°05′00″ | 43°02′30″ | 43°00′00″
T. 4 S. | T. 3 S. | T. 5 S. | T. 4 S.
4777 | 4776 | 4775 | 4774 | 4773 | 4772 | 4771 | 4770 | 4769 | 4768 | 4767 | 4766 | 4765 | 4764
4775000mN | 4774000mN | 4765000mN | 4764000mN
286000mE | 287000mE | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296000mE

Larkspur Park

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

17	18	19	17 LAIDLAW BUTTE 18 BEAR DEN BUTTE 19 BEAR PARK WEST
21		23	21 LAIDLAW LAKE 23 BEAR PARK SW
26	27	28	26 COMMUNITY LAKE 27 LARKSPUR PARK 28 BRIGHAM POINT

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BOTTLENECK LAKE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
BEAR PARK SW QUADRANGLE
SHEET NUMBER 23 OF 35

Joins sheet 18, Bear Den Butte
Joins sheet 19, Bear Park West
Joins sheet 20, Bear Park East
Joins sheet 22, Bottleneck Lake
Joins sheet 24, Mule Butte
Joins sheet 27, Larkspur Park
Joins sheet 28, Brigham Point
Joins sheet 29, Bear Trap Cave

113° 30′ 00″ | 113° 27′ 30″ | 113° 25′ 00″ | 113° 22′ 30″
R. 25 E. | R. 26 E.
T. 4 S. | T. 3 S.
T. 5 S. | T. 4 S.
43° 07′ 30″ | 43° 05′ 00″ | 43° 02′ 30″ | 43° 00′ 00″
297 000m E | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306
4777 | 4776 | 4775 | 4774 000m N | 4773 | 4772 | 4771 | 4770 | 4769 | 4768 | 4767 | 4766 | 4765 | 4764 000m N

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

18	19	20	18 BEAR DEN BUTTE 19 BEAR PARK WEST 20 BEAR PARK EAST
22		24	22 BOTTLENECK LAKE 24 MULE BUTTE
27	28	29	27 LARKSPUR PARK 28 BRIGHAM POINT 29 BEAR TRAP CAVE

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BEAR PARK SW, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
MULE BUTTE QUADRANGLE
SHEET NUMBER 24 OF 35

Joins sheet 19, Bear Park West

Joins sheet 20, Bear Park East

113°22′30″ — 113°20′00″ — 113°17′30″ — 113°15′00″

307 000mE — 308 — 309 — 310 — 311 — 312 — 313 — 314 — 315 — 316 — 317 000mE

R. 26 E. | R. 27 E.

43°07′30″ — 43°05′00″ — 43°02′30″ — 43°00′00″

4777 — 4776 — 4775 — 4774 000mN — 4773 — 4772 — 4771 — 4770 — 4769 — 4768 — 4767 — 4764 000mN

T. 4 S. | T. 3 S.

T. 5 S. | T. 4 S.

GREAT RIFT

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Mule Butte

Bear Trap Lava Tube

Joins sheet 23, Bear Park SW

Joins sheet 25, Mosby Butte

Joins sheet 28, Brigham Point

Joins sheet 29, Bear Trap Cave

Joins sheet 30, Pillar Butte

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

19	20	
23		25
28	29	30

19 BEAR PARK WEST
20 BEAR PARK EAST
23 BEAR PARK SW
25 MOSBY BUTTE
28 BRIGHAM POINT
29 BEAR TRAP CAVE
30 PILLAR BUTTE

INDEX TO ADJOINING 7.5 MAPS

MULE BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
MOSBY BUTTE QUADRANGLE
SHEET NUMBER 25 OF 35

113°15′00″ | R. 27 E. | R. 28 E. | 113°12′30″ | 113°10′00″ | 113°07′30″

37 000mE 318 319 320 321 322 323 324 325 326 27 000m E

43°07′30″ | 43°05′00″ | 43°02′30″ | 43°00′00″

4777 4776 4775 4774000mN 4773 4772 4771 4770 4769 4768 4767 4766 4765 4764000mN

4773000mN

T. 4 S. | T. 3 S.

T. 5 S. | T. 4 S.

Joins sheet 24, Mule Butte

Joins sheet 29, Bear Trap Cave

Joins sheet 30, Pillar Butte

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency, from 2004 NAIP aerial photography. Cultural information and public land survey system (PLSS) were acquired from U.S. Department of Interior, U.S. Geological Survey. Cultural information was edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983(NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

20		20 BEAR PARK EAST
24		24 MULE BUTTE
29	30	29 BEAR TRAP CAVE 30 PILLAR BUTTE

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MOSBY BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 35

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DEPARTMENT OF AGRICULTURE
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
COMMUNITY LAKE QUADRANGLE
SHEET NUMBER 26 OF 35

113° 45′ 00″ | 113° 42′ 30″ | 113° 40′ 00″ | R. 23 E. | R. 24 E. | 113° 37′ 30″

43° 00′ 00″ | 42° 57′ 30″ | 42° 55′ 00″ | 42° 52′ 30″

T. 6 S. | T. 5 S.

Community Lake

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 2, Nichols Reservoir

Joins sheet 6, Inferno Cone

Joins sheet 5, Blizzard Mountain South

Joins sheet 7, The Watchman

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North American Datum of 1983(NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

2 NICHOLS RESERVOIR
5 BLIZZARD MOUNTAIN SOUTH
6 INFERNO CONE
7 THE WATCHMAN

COMMUNITY LAKE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 26 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
LARKSPUR PARK QUADRANGLE
SHEET NUMBER 27 OF 35

Joins sheet 21, Laidlaw Lake

Joins sheet 22, Bottleneck Lake

Joins sheet 23, Bear Park SW

Joins sheet 26, Community Lake

Joins sheet 28, Brigham Point

113°37′30″ | 113°35′00″ | 113°32′30″ | 113°30′00″

R. 24 E. | R. 25 E.

T. 6 S. | T. 5 S.

43°00′00″ | 42°57′30″ | 42°55′00″ | 42°52′30″

286000m E | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296000m E

4764 | 4763 | 4762 | 4761 000m N | 4760 | 4759 | 4758 | 4756 | 4755 | 4754 | 4753 | 4752 | 4751 000m N

Larkspur Park

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

29 | 47 | 74

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

21	22	23
26		28

21 LAIDLAW LAKE
22 BOTTLENECK LAKE
23 BEAR PARK SW
26 COMMUNITY LAKE
28 BRIGHAM POINT

INDEX TO ADJOINING 7.5 MAPS

LARKSPUR PARK, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
BRIGHAM POINT QUADRANGLE
SHEET NUMBER 28 OF 35

Joins sheet 22, Bottleneck Lake

Joins sheet 23, Bear Park SW

Joins sheet 24, Mule Butte

113° 30′ 00″ — 113° 27′ 30″ — 113° 25′ 00″ — 113° 22′ 30″

R. 25 E. | R. 26 E.

43° 00′ 00″ — 42° 57′ 30″ — 42° 55′ 00″ — 42° 52′ 30″

Bear Trap Lava Tube

BRIGHAM POINT

Cream Can Junction

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

T. 6 S. | T. 5 S.

Joins sheet 27, Larkspur Park

Joins sheet 29, Bear Trap Cave

Joins sheet 31, Schodde Well

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

22	23	24	22 BOTTLENECK LAKE 23 BEAR PARK SW 24 MULE BUTTE
27		29	27 LARKSPUR PARK 29 BEAR TRAP CAVE
		31	31 SCHODDE WELL

INDEX TO ADJOINING 7.5 MAPS

BRIGHAM POINT, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 28 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
BEAR TRAP CAVE QUADRANGLE
SHEET NUMBER 29 OF 35

113°22′30″ — 113°20′00″ — 113°17′30″ — 113°15′00″

307000mE — 308 — 309 — 310 — 311 — 312 — 313 — 314 — 315 — 316000mE

R. 26 E. | R. 27 E.

43°00′00″ — 42°57′30″ — 42°55′00″ — 42°52′30″

4763 — 4762 — 4761 — 4760000mN — 4759 — 4758 — 4757 — 4756 — 4755 — 4754 — 4753 — 4752 — 4751 — 4750000mN

T. 5 S. | T. 6 S.

Apollo Well

Bear Trap Lava Tube

Bear Trap Cave

WAPI FLOW

Split Butte

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 26, Brigham Point

Joins sheet 30, Pillar Butte

Joins sheet 31, Schodde Well

Joins sheet 32, Rattlesnake Butte

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

23	24	25	23 BEAR PARK SW 24 MULE BUTTE 25 MOSBY BUTTE
28		30	28 BRIGHAM POINT 30 PILLAR BUTTE
	31	32	31 SCHODDE WELL 32 RATTLESNAKE BUTTE

INDEX TO ADJOINING 7.5 MAPS

BEAR TRAP CAVE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 29 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
PILLAR BUTTE QUADRANGLE
SHEET NUMBER 30 OF 35

Joins sheet 25, Mosby Butte

113°15′00″ | R. 27 E. | R. 28 E. | 113°12′30″ | 113°10′00″ | R. 28 E. | R. 29 E. | 113°07′30″

43°00′00″ | 42°57′30″ | 42°55′00″ | 42°52′30″

4763 | 4762 | 4761 | 4760000mN | 4759 | 4758 | 4757 | 4755 | 4753 | 4752 | 4751 | 4750000mN

T. 5 S. | T. 6 S.

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

GREAT RIFT

WAPI FLOW

Wapi Park

Pillar Butte

WAPI FLOW

Joins sheet 29, Bear Trap Cave

Joins sheet 31, Schodde Well

Joins sheet 32, Rattlesnake Butte

Joins sheet 33, Pillar Butte SE

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

24	25	
29		
31	32	33

24 MULE BUTTE
25 MOSBY BUTTE
29 BEAR TRAP CAVE
31 SCHODDE WELL
32 RATTLESNAKE BUTTE
33 PILLAR BUTTE SE

INDEX TO ADJOINING 7.5 MAPS

PILLAR BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 30 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
SCHODDE WELL QUADRANGLE
SHEET NUMBER 31 OF 35

Joins sheet 28, Brigham Point
Joins sheet 29, Bear Trap Cave
Joins sheet 30, Pillar Butte
Joins sheet 32, Rattlesnake Butte
Joins sheet 34, Lake Walcott East
Joins sheet 35, Gifford Spring

113°22′30″ 113°20′00″ 113°17′30″ 113°15′00″
42°52′30″ 42°50′00″ 42°47′30″ 42°45′00″
306 000mE 307 308 309 310 311 312 313 314 315 316 000mE
4749 4748 4747 4746 000mN 4745 4744 4743 4742 4741 4740 4739 4738 4736 000mN
R. 26 E. | R. 27 E.
T. 7 S. | T. 6 S.
T. 8 S. | T. 7 S.

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

WAPI FLOW

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

28	29	30
		32
	34	35

28 BRIGHAM POINT
29 BEAR TRAP CAVE
30 PILLAR BUTTE
32 RATTLESNAKE BUTTE
34 LAKE WALCOTT EAST
35 GIFFORD SPRING

INDEX TO ADJOINING 7.5 MAPS

SCHODDE WELL, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 31 OF 35

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UNITED STATES
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
RATTLESNAKE BUTTE QUADRANGLE
SHEET NUMBER 32 OF 35

Joins sheet 29, Bear Trap Cove

Joins sheet 30, Pillar Butte

113°15′00″ | R. 27 E. | R. 28 E. | 113°12′30″ | 113°10′00″ | R. 28 E. | R. 29 E. | 113°07′30″

42°52′30″ | 42°50′00″ | 42°47′30″ | 42°45′00″

4749 | 4748 | 4747 | 4746000mN | 4745 | 4744 | 4743 | 4742 | 4741 | 4740 | 4739 | 4738 | 4737 | 4736000mN

316 000mE | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 000mE

T. 7 S. | T. 6 S.

T. 8 S. | T. 7 S.

WAPI FLOW

Pleasant Valley

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

Joins sheet 31, Schodde Well

Joins sheet 33, Pillar Butte SE

Joins sheet 34, Lake Walcott East

Joins sheet 35, Gifford Spring

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

29	30	
31		33
34	35	

29 BEAR TRAP CAVE
30 PILLAR BUTTE
31 SCHODDE WELL
33 PILLAR BUTTE SE
34 LAKE WALCOTT EAST
35 GIFFORD SPRING

INDEX TO ADJOINING 7.5 MAPS

RATTLESNAKE BUTTE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 32 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 30, Pillar Butte

UNITED STATES
DEPARTMENT OF AGRICULTURE
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CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
PILLAR BUTTE SE QUADRANGLE
SHEET NUMBER 33 OF 35

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NORTH

QUADRANGLE LOCATION

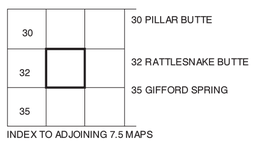
SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS



PILLAR BUTTE SE, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 33 OF 35

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UNITED STATES
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NATURAL RESOURCES CONSERVATION SERVICE

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, IDAHO
LAKE WALCOTT EAST QUADRANGLE
SHEET NUMBER 34 OF 35

Joins sheet 32, Rattlesnake Butte

Joins sheet 31, Schodde Well

Joins sheet 35, Gifford Spring

113°22′30″ | 113°20′00″ | 113°17′30″ | 113°15′00″

42°45′00″ | 42°42′30″ | 42°40′00″ | 42°37′30″

306000mE | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315

4735 | 4734 | 4733 | 4732000mN | 4731 | 4730 | 4729 | 4728 | 4727 | 4726 | 4725 | 4724 | 4723 | 4722000mN

R. 26 E. | R. 27 E.

T. 9 S. | T. 8 S.

WAPI FLOW

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

	31	32
		35

31 SCHODDE WELL
32 RATTLESNAKE BUTTE
35 GIFFORD SPRING

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LAKE WALCOTT EAST, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 34 OF 35

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UNITED STATES
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CRATERS OF THE MOON NATIONAL
MONUMENT AND PRESERVE, IDAHO
GIFFORD SPRING QUADRANGLE
SHEET NUMBER 35 OF 35

113°15′00″ | 113°12′30″ | 113°10′00″ | 113°07′30″
42°45′00″ | 42°42′30″ | 42°40′00″ | 42°37′30″
R. 27 E. | R. 28 E.
T. 9 S. | T. 8 S.
316 000mE 317 318 319 320 321 322 323 324 325 326 000mE
4732 000mN

WAPI FLOW

CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

31	32	33
34		

31 SCHODDE WELL
32 RATTLESNAKE BUTTE
33 PILLAR BUTTE SE
34 LAKE WALCOTT EAST

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GIFFORD SPRING, IDAHO
7.5 MINUTE SERIES
SHEET NUMBER 35 OF 35

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